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ABSTRACT

The model outlined in this document describes the development of an integrated approach to teaching content reading skills to teachers. Methods and materials applicable to texts and media currently used in classrooms were produced by inservice teachers of science, math, and social studies at a Salt Lake City junior high school. This document contains a copy of the original proposal, a description of the inservice model, an evaluation of the project, teacher evaluations, and outlines of ten workshop sessions (critical and interpretive reading skills, critical thinking, comprehension skills, word attack skills, word identification skills, following directions, vocabulary, vocabulary building, reading study skills, and summaries). Included in each of the session outlines are a discussion of methods and copies of materials developed for use in that skill area. (JM)

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AN INTERDISCIPLINARY INSERVICE MODEL FOR TEACHING READING IN THE CONTENT AREAS: GRADES 7-9

Conducted at

West Lake Junior High School
Granite School District
Salt Lake City, Utah

Spring 1975

Project Director

Dr. Max F. Jackman

Consultants

Mrs. Karen Nielsen
Mrs. Mary Smith

CS 002 678

GRANITE SCHOOL DISTRICT
WEST LAKE JUNIOR HIGH SCHOOL
3400 SOUTH 3450 WEST
SALT LAKE CITY, UTAH 84119
TELEPHONE 299-1411

September 24, 1975

Mr. La Mar Allred
Coordinator of Inservice
Staff Development
Utah State Board of Education
136 East South Temple Street
Salt Lake City, Utah 84111

Dear La Mar:

This is the final report of the Interdisciplinary Inservice Model for Teaching Reading in the Content Areas Workshop conducted at West Lake Jr. High during the 1974 - 75 School year. The packet includes an abstract, copy of the original proposal, evaluation of the project by Dr. Harry P. Bluhm, teacher evaluations, workshop outline, and teacher classroom - tested materials.

The staff at West Lake effected noticable improvement in the teaching of the reading skills presented. In addition, the project produced a viable model usable by other faculties and schools. It is my feeling that the program could and should be replicated in other secondary schools. A copy of a phase two proposal to disseminate the project to other secondary schools during the 1975 - 76 school year is being submitted under separate cover.

May I express appreciation to you on behalf of the teachers and myself for the opportunity to develop and conduct last years workshop program. If I can be of further help please let me know.

Sincerely,

Max F. Jackman, Ed. D.
Principal,
West Lake Jr. High School

gth

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ABSTRACT

Describes the development of an integrated approach to teaching teachers content reading skills. The program provided methods and materials in the five skills areas: (1) word identification, (2) vocabulary, (3) comprehension, (4) critical and interpretive reading, and (5) work-study skills. The Utah State Office of Education assigned the task of developing a protypical program for an interdisciplinary approach to teaching reading skills in content areas to specialists at West Lake Junior High School, Granite School District, Salt Lake City, Utah. Teachers in the science, math, and social studies fields participated. Methods and materials were produced which were applicable to texts and media currently used in the classrooms. Advantages observed through this type of inservice training were: (1) the teacher developed materials relevant to his current study, (2) the teacher immediately applied the concepts presented in the workshop, (3) the teacher was able to evaluate the effectiveness of materials he developed and received immediate assistance in any needed revision, (4) the teacher's constant interaction with other teachers in his field provided a sounding board for strategies and an interchange of ideas, and (5) the teacher and workshop leaders were able to evaluate personal growth throughout the session, thus providing opportunity for structuring the course to individual needs of participants. Final evaluation of the effectiveness of the program on improvement of student skills will be made from data collected in a two-year longitudinal study.

The review of the analyses of the data collected on participant and student performance related to the inservice training project suggests the following conclusions:

1. The workshop met its formative goals of:
   a. Building teacher confidence in their perceived ability to teach functional reading skills
   b. Encouraging teachers in the content areas of mathematics, science, and social studies to teach functional reading skills in their classrooms

2. The West Lake Junior High School has fulfilled its program goal of developing and implementing a viable inservice training program of teaching functional reading skills to content teachers.

3. The impact of the workshop's effect on improving seventh, eighth, and ninth grade achievement in reading, mathematics, and English or language arts is yet to be determined. Preliminary comparisons of ninth grade treatment students achievement performance compared to comparison students performance is inconclusive.

To fully evaluate the effect of the treatment on student performance it is recommended that:

1. Achievement baseline data be collected on the seventh, eighth, and ninth grade students. This would insure applying the pre-post one group quasi experimental research design. Consideration can be given to using as baseline data district test results of students tested previous to the introduction of the inservice program in the school.

2. Consideration be given to developing and administering criterion related tests on the specific reading skills to seventh, eighth, and ninth graders following the teaching of the given reading skills. Comparison of results to the established criterion would reveal how successful the concepts had been taught and learned.

It is further recommended that personnel in the school use the results of the TASK item analyses to zero in on reading deficits that are evident in ninth grade achievement performances.

A word of caution is made respecting student evaluation during the second year of the project. The fact that seventh and eighth graders have been exposed to the reading skill instruction nullifies using as baseline or pre-treatment data the results of the proposed 1975 fall testings.

Max F. Jackman

Dr. Max F. Jackman, Principal
West Lake Junior High School
Project Director

WEST LAKE JUNIOR HIGH

AN INTERDISCIPLINARY INSERVICE MODEL FOR TEACHING READING IN THE CONTENT AREAS: GRADES 7-9

PROJECT DIRECTOR: Dr. Max F. Jackman

CONSULTANTS: Mrs. Karen Nielsen
Mrs. Mary Smith

I. HISTORY

The developmental reading program at West Lake Junior High, Granite School District, Utah, was set up in 1970 to include all seventh grade students not involved in foreign language studies. The testing program used in this program, as well as the standardized tests administered under the direction of Granite School District, produced evidence that our students did not have adequate reading skills, particularly those needed in content areas. Further school-wide reading tests indicated the problems extended to eighth and ninth grade students as well. These data were presented to the entire faculty by Mr. Bergstrom, the principal of the school at that time. Panel and group discussions bared the concern of all teachers for this problem. Presentations were begun offering such approaches as the "cloze" techniques, vocabulary exercises, how to set goals for skills, and other methods, by the reading specialist. In the fall of 1973 a workshop under the direction of the English department chairman, Nate Adamson, and supported by complex and district administration was held. Mrs. Karen Nielsen and Mrs. Mary Smith served as leaders for this activity-oriented instruction in content reading. Fifteen teachers, plus visitors from district and the State School Office attended. Follow-up help was given by the two leaders as requested by teachers. Pre-school faculty workshops were also presented in techniques for various methods of evaluation to determine skills of students throughout course instruction. Simple formats for setting class objectives were developed and presented. Teachers were instructed in their use and encouraged to develop, through this approach, readiness for teaching. All teachers were directly involved in these directed activities.

II. STATEMENT OF PROBLEM

A longitudinal analysis of Stanford Diagnostic Test of Reading for three years centers around the data which reveals our students deficient in the skills of comprehension, word identification, critical and interpretive reading, vocabulary, and work study skills in the content areas. One in three students is two or more grades below in the above mentioned skills of reading.

In analyzing district-wide data, similar schools have identical or near identical problems to West Lake Junior High.

New information which will result from the inservice workshops will be:

a. A packet of classroom-tested materials on the skills outlined in the scope (see Appendix A) will be developed.

b. An informational packet will be submitted to the Office of the State Board of Education.

III. REVIEW OF THE LITERATURE

In reviewing the literature, writers Karlin and Early note there is a paucity of studies in reading in the content area. Project director and consultants attended conferences of the International Reading Association

in Detroit, Denver, and New Orleans for the express purpose of being apprised of the latest findings in this field. Nothing significant was available.

Two other projects are being conducted in the state of Utah at the high school level. To our knowledge, no other work is being done at the junior high level.

IV. OBJECTIVES

To concern content area teachers with the following basic principles of instruction:

1. Establish readiness for reading and studying a chapter, book, article, or selection by:
   a. Relating student's past experiences to the reading
   b. Developing key words and concepts students will meet in the selection
   c. Establishing purposes for reading

2. Improve student understanding by developing study techniques applicable to specific content area reading. Application of skills of comprehension, word identification, critical and interpretive reading, vocabulary, and work study skills will be taught.

3. Teachers will prepare a packet of classroom tested materials on the skills outlined in the scope, to be available for use by the Office of the State Board of Education.

V. METHODS AND PROCEDURES

1. Sequence

   a. There will be twenty workshops conducted during February, March, and April; ten for each of the two content areas (science-math and social studies).
   b. Each weekly workshop will consist of two hours of in-class time, followed by two hours of self-directed preparation. Four hours of classroom application (by each participant) will occur between each session.
   c. Content areas to be included will be social studies and science-mathematics.
   d. Consultants will be involved with at least forty hours each of pre-workshop preparation and fourteen hours of ongoing preparation for each workshop session.

2. Methods

   a. Specific methods applicable to social studies and math-science following skills outlined in the scope (Appendix A) will be presented.

b. The five common reading skills initially introduced elsewhere will be reinforced by identifying them, offering alternatives for discussing and clarifying them, and demonstrating application of them.
c. Methods will be taught to differentiate assignments when only one basic text is used.

VI. EVALUATION

Objective 1

a. An inventory of specific strengths and weaknesses of the participants will be taken and a profile for the group will be made in each of the five skill and method areas.
b. An observation by a peer, a department chairman, the principal, or a video-tape will be made and a self-critique of at least one of the five skill areas will be made each participant.
c. Informal observation, interviews, and discussions will be used to further evaluate teacher and student progress by the project director, independent consultants, and the workshop consultants.

Objective 2

d. Formal testing instruments administered in the district will be used for pre- and post-testing. Data derived will be reviewed by an independent evaluation and student progress will be assessed.

Objective 3

e. For each of the five skill areas at least ten specific guides, charts, exercises, or other aids will be produced in a form usable by other schools.

VII. DISSEMINATION

The role of the model as developed will be an inservice training experience for teachers. Visitors to the workshops will be cleared through the project director.

The packet of teacher-prepared materials and an inservice content packet for the State School Office will be available for evaluation by interested parties. A short write-up of the total effort will be prepared by the project director in the form of a final report.

VIII. PERSONNEL

Project Director	Dr. Max F. Jackman
Principal (administrative functions necessary to the project)	Dr. Max F. Jackman
Consultants-Instructional Resource Team	To be announced
Reading Specialists	Mrs. Karen Nielsen Mrs. Mary L. Smith
Research Analyst	To be announced
Curriculum Expert	To be announced

APPENDIX A

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GUIDELINES: Basic competencies in functional reading skills for levels 7 and 9 are outlined on the following pages.

WORD IDENTIFICATION SKILLS

Session 1

By the beginning of grade 7 children should have developed considerable facility in the following skills:

1. Using generalizations governing sounds in attacking new words.
2. Attacking words with common variations in pronunciation.
3. Identifying and using inflectional endings.
4. Identifying and using derived forms of words.
5. Identifying and using common prefixes and suffixes.
6. Using syllabication and accent in identifying new words.
7. Identifying and using compound words.

Session 2

By the end of grade 9 students should have developed facility in the following skills:

1. Using generalizations and common variations governing sounds in attacking new words.
2. Recognizing familiar elements in derived forms.
3. Using syllabication and accent in identifying new words.
4. Identifying and comprehending compound words.

VOCABULARY

Session 1

Upon entering grade 7 pupils should be skilled in adding words to their vocabulary through:

1. Using picture and context clues to word meaning.
2. Incorporating precise terms into their total vocabulary.
3. Understanding word denotation and connotation.
4. Using the dictionary for word meanings.
5. Understanding new words through known parts.
6. Understanding synonyms.

Session 2

By the end of grade 9 students should be skilled in adding new words to their vocabulary through:

1. Context clues.
2. Understanding words through separation into root and affixes.
3. Understanding word connotation and denotation.
4. Incorporating precise and technical language into their total vocabulary.
5. Understanding the use of synonyms and antonyms.
6. Application of dictionary skills.

COMPREHENSION SKILLS

Session 1

Upon entering grade 7 students should have developed skill in comprehending material through:

1. Identifying the main idea.
2. Reading for detail.
3. Reading for sequential order.
4. Reading for cause and effect relationship.
5. Understanding the effect of punctuation on meaning.

Session 2

By the end of grade 9 pupils should have developed considerable skill in comprehending reading material through:

1. Unraveling complicated sentences.
2. Locating topic sentences.
3. Identifying inferred main ideas.
4. Isolating details.
5. Recognizing sequential order.
6. Recognizing relationship between cause and effect.
7. Using punctuation as an aid to comprehension.

CRITICAL AND INTERPRETIVE READING SKILLS

Session 1

Upon entering grade 7 most pupils should have attained facility in the following critical and interpretive reading skills:

1. Differentiating fact from opinion.
2. Judging reliability of an author's statement.
3. Judging the relevancy and adequacy of context.
4. Recognizing overstatements on unfounded claims.
5. Drawing conclusions and inferences.
6. Anticipating events.
7. Relating what is read to past experience and self.

Session 2

By the end of grade 9 most students should have attained facility in the following critical and interpretive reading skills:

1. Evaluating content in terms of purpose.
2. Recognizing the author's purpose.
3. Evaluating author's purpose.
4. Judging reliability of information.
5. Differentiating between fact and opinion.
6. Detecting propaganda.
7. Identifying unsupported generalizations and recognizing exaggerations.
8. Anticipating forthcoming events.
9. Reading conclusion and making inferences.
10. Applying implications to real life.

READING STUDY SKILLS

Session 1

Upon entering grade 7 most pupils should have attained facility in the following reading study skills:

1. Differentiating reading purposes.
2. Following written directions.
3. Using the parts of a book.
4. Skimming for information.
5. Making a written summary.
6. Taking notes.
7. Organizing information from several different sources.
8. Using outlining as a study technique.
9. Reading graphic material.
10. Using guide words in the dictionary.

Session 2

By the end of grade 9 most students should have attained facility in the following reading study skills:

1. Establishing purposes for reading.
2. Following written directions.
3. Understanding and using organizational patterns.
4. Skimming material for specific information and to answer questions.
5. Summarizing ideas.
6. Using note-taking techniques.
7. Organizing material through outlining.
8. Reading graphic material.
9. Using the dictionary effectively.

Budget for full implementation includes:

A.	Materials	Paper supplies to reproduce workshop materials	$ 300.00
B.	Printing	Printing costs to reproduce materials	50.00
C.	Typing	160 hours of typing at $3.00/hour	480.00
D.	Teacher stipends	20 teachers x 80 hours @ $7.43/hour	12,117.10
E.	Consultants (2)		
		Pre-workshop preparations	
		40 hours @ $10.71 x 2	856.80
		10 workshop sessions x 14 hours x 2	2,998.80
F.	Evaluation		1,500.00
		Total	$18,073.60

COPY

August 15, 1975

Max Jackman
Principal, West Lake Jr. High

Dear Max:

Respecting the 1975 evaluation report of the West Lake Project the following points should be taken into account:

1. The project, being in its 1st year, should be considered developmental (formative, evaluational) only. Thus, the expectation of seeing the direct results in students' achievement attributable to the treatment is premature since the implementation of the workshop occurred late in the year.

2. To evaluate the effect of the treatment on student achievement every effort should be made to collect baseline data reflecting achievement before the introduction of the treatment. Where test data is had of students enrolled the year before introduction of the treatment, use it. Otherwise, assure having the instrument administered before treatment commences.

3. If possible, have a control school or comparable grade of students to assess the effect of the treatment.

4. Consider getting a 7th grade achievement test to assess performance. The diagnostic test, though it has its purpose, is not the ideal criterion measure.

5. The other test data collected in 74-75, e.g. Iowa Silent Reading Test and the SAT will have to be used in the 75-76 evaluation. Presently, the data is descriptive only and does not contribute to an assessment of treatment effect.

6. The detailed content analysis made of the participant evaluation of the workshop is revealing in that (a) concrete suggestions for improvement are included, (b) the workshop is perceived as being beneficial, and (c) attempts were made to appraise student reactions and performance to the classroom teaching of functional reading skills.

7. Every consideration should be given to the use of criterion referenced tests in evaluating the effectiveness of the treatment. In that specific reading skills are taught, the criterion tests (they would have to be locally developed) would better measure student achievement.

8. In that 74-75 was a developmental year, the formative goal evaluation reveals that the project objectives were realized. This should be considered by the state agency as they decide upon the continuance of the project.

It has been a privilege working with you in the assessment of the 1st year of the project. The statement of services rendered is attached.

If you wish to have me meet with school personnel regarding the report I shall be happy to do so.

Sincerely,

/s/ Harry

Dr. Harry P. Bluhm
Assistant Professor, Educational Psychology
University of Utah

WEST LAKE JUNIOR HIGH SCHOOL
GRANITE SCHOOL DISTRICT
AN INTERDISCIPLINARY INSERVICE MODEL
FOR TEACHING READING IN THE
CONTENT AREAS--GRADES 7-9

I. INTRODUCTION

A. Project title

An Interdisciplinary Inservice Model for Teaching Reading in the Content Areas--Grades 7-9

B. Project period

July 1, 1974 to June 30, 1975

C. Target population

The project concentrates on seventh, eighth, and ninth grade students who do not have adequate reading skills. Results of a three-year analysis of student performance on the Stanford Diagnostic Test of Reading reveals deficiencies in the skill areas of (1) comprehension, (2) word identification, (3) critical and interpretive reading, vocabulary, and work study skills. One of the three students tested scored two or more grade levels below the norm in these skill areas.

D. Description of the model

The model has as its basic assumption that reading in the secondary schools is a concern of all teachers. Each teacher's subject area can therefore be considered a vehicle by which reading skills can be taught to students.

The model provides for a series of inservice lessons to teachers accenting important functional reading skills. Initially, 20 teachers in the mathematics, science, and social studies fields were involved. They participated in ten sessions with each session accenting a different reading skill area. The skill areas which had objectives for seventh and for ninth grade students were (1) word identification skills, (2) vocabulary, (3) comprehension skills, (4) critical and interpretive reading skills, and (5) reading study skills.

The format of the inservice training provided that participants (1) develop reading instructional materials related to their content area, (2) immediately apply the reading skill concepts learned in their classroom, (3) evaluate the effectiveness of the developed materials in teaching students given reading skills, (4) interact and share with each other regard-

ing the outcome of reading materials prepared and used in the classroom, and (5) evaluate their personal growth throughout the ten sessions. The participant feedback was used to restructure, as needed, the lessons to assure meeting participant needs.

II. EVIDENCE OF EFFECTIVENESS/SUCCESS

A. Project objectives

1. The summative objective to be evaluated was:

   The reading achievement of ninth grade West Lake Junior High School students who received direct classroom instruction in functional reading skills will be significantly greater than the achievement of comparable ninth grade students who did not receive such instruction.

2. The formative objectives to be evaluated were:

   a. West Lake Junior High School personnel will develop and implement a ten-week functional reading skills instructional in-service training program for teachers in the various content areas during the 1974-75 school year.

   b. West Lake Junior High School teachers of mathematics, science, and social studies will, following participation in an inservice training program, implement lesson plans in their classes accenting an objective under each of the reading skill areas taught.

   c. The perception of West Lake Junior High School teachers toward their competency to teach seventh and ninth grade reading skill objectives will increase following their participation in a ten-lesson inservice training program in reading.

   d. The attitudes of West Lake Junior High School teachers toward the teaching of reading skills in their content area will become positive following their participation in a ten-session inservice training program in reading.

B. Activities to achieve objectives

1. Summative objective: The major activity was the training of junior high teachers in the ten-lesson inservice training program which emphasized functional reading skills. These teachers, by exposure to techniques, would implement them in their classroom instruction. It was expected that these teachers would recognize and accept responsibility for teaching reading skills through the medium of their content material. It was further expected that they would become more confident in their perceived ability to teach specific objectives in the reading skill areas. Student achievement gains were expected as an outcome of teacher preparation and involvement in reading instruction.

2. Formative objectives

a. The two teachers delegated responsibility for teaching functional reading skills to content teachers utilized their skills in preparing the instructional materials for the ten inservice training sessions.

b. By assignment, content teachers were required, following each inservice training session, to prepare and implement lesson materials accenting the reading skill taught them.

c. Content teachers participating in the inservice training program were administered a survey at the beginning and at the end of the program to assess what change occurred in their perceived competency to teach functional reading skills to students.

d. Participants in the inservice training program were requested to evaluate their personal growth as it related to teaching reading in their content area as they progressed through the ten sessions. An overall evaluation of their attitude was also requested by the program instructors at the end of the training program.

C. Evaluation strategy

The evaluation design proposed to determine if student achievement gains occurred attributable to the treatment effect of content teachers teaching functional reading skills in their classes was a pre-post one group design. The evaluation instruments used to assess achievement performance and the dates of their administration were as follows:

1. Ninth grade

a. Iowa Silent Reading Test (administered May 1975 [post-test])

b. Tests of Academic Skills (administered May 1975 [post-test])

2. Eighth grade

a. Stanford Achievement Test, Form A (administered October 1974 [pre-test])

b. Stanford Achievement Test, Form B (to be administered October 1975 [post-test])

Lack of pre-test data on the TASK and Iowa Silent Reading Test for ninth grade students prohibited the use of the pre-post one group design. In its stead a post-test comparison was conducted of ninth graders performance in the treatment school to ninth graders performance in a non-treatment school. The non-treatment school was similar to the treatment school in terms of prior academic achievement on the TASK.

Post-test data on the Stanford Achievement Test prohibited conducting an analysis of achievement gains attributable to the treatment on eighth grade student performance.

The Stanford Diagnostic Test was administered to seventh graders, but since it is not an achievement test and further since no post-data was collected, a summative analysis of their performance was not possible.

D. Evaluation findings

1. Summative objective--ninth graders achievement performance:

Tables 1-20 (see Appendix A) contain the item-by-item and sub-test total comparison results of the treatment vs. non-treatment student performance. The statistic employed to determine whether the percentage of students getting the item correct was by chance or could be considered a real difference was the difference of percentages between two independent groups.

The average percent of treatment students answering the items for each sub-test correctly was also compared to the average percentage answered correctly by the national standardization sample.

An examination of the analyses revealed the following:

a. The mean percentage correct response of the treatment school ninth graders was above that of the non-treatment ninth graders on each of the sub-tests of the TASK tests of reading, English, and mathematics. A real difference, using the .05 level of significance when testing the difference between percentages, was found in favor of the treatment students on the following sub-tests: (1) sentence sensitivity, (2) paragraph arrangement, (3) integers and exponents, (4) global meaning, (5) meaning from context, and (6) common and decimal fractions.

b. The item-by-item analysis of the difference between the percentage correct response obtained by the comparison groups showed the following:

Sub-Test	No. Items	No. Items Sig. Answered Correct by Treatment Students
Reading	78	37
English	69	29
Math	48	20
Total	195	86

It should be remembered that with the number of comparisons conducted that some significant differences may be attributable to chance. Ten items of the total of 195 test items could be due to chance only. It is noted that a significant percentage difference between the comparison groups was found on 86 items.

c. Treatment students had an average percentage correct response on each of the reading, language, and mathematic sub-tests below that of the national standardization sample's mean percent correct response.

2. Formative objectives

a. Objective a: Ten-week functional reading skills instructional inservice training program to be developed and implemented

Results: The attainment of this objective is attested by first, the actual conducting of ten inservice sessions for 20 teachers from the content fields of mathematics, science, and social studies; and second, the inservice training manual prepared by the inservice training program instructors, and third, by the success of the program as assessed by the 20 participants.

Each participant submitted an overall evaluation of the entire program and an evaluation of each of the ten sessions.

The results of the participant overall evaluation showed the following (see Appendix B for Content Analysis):

(1) Out of a total of 62 determined comments 64.5 percent were positive, 14.5 percent were negative, and 21 percent were in the form of recommendations or suggestions.

(2) Analysis of the positive aspects of the inservice program showed that participants seemed to (a) regard the workshop itself as valuable, interesting, informative, stimulating, and with merit; (b) feel they benefitted and grew from the experience; (c) find certain reading skill objectives very valuable both from a personal and classroom application point of view; (The word attitude skill topic ranked first as to the reading objective liked best.) (d) like the mutual sharing of their attempts to implement session objectives; (e) feel they became more aware of student reading limitations and how students might be benefitted through the teaching of reading skills in the content areas; (f) find the workshop material interesting, thorough, and abundant, and (g) feel the instructors were well-prepared and with a good attitude.

(3) Analysis of negative comments showed that the participants felt (a) all workshop materials should be bound in book form or pamphlet form; (b) the workshop should be scheduled earlier

in the school year, (c) lesson materials might further be expanded with more suggestions for classroom application, and (d) all teachers should participate in the program.

Analysis of the individual sessions by the participants revealed these major points:

(1) Participant comments were overwhelmingly positive or constructive. Out of a total of 179 comments recorded over the ten sessions only 24 were negative in nature.

(2) Session one, of all the sessions, seemed to have given participants more cause for concern. Essentially, they seemed unsure of the workshop purposes, their function, and the time committment expected of them.

(3) Basically most of the comments made about sessions two through ten dealt with lesson presentation, content, and materials, including the session exercises. The common thread that seemed to run through these comments was that the sessions had personal meaning and that it was possible to apply the reading skills taught in one's respective classroom.

(4) The feedback sessions which allowed participants to learn what one another was doing generally seemed to have value. Comments were made by some participants of its worth in seven sessions.

b. Objective b: Participants in the inservice training program will implement lesson plans in their classrooms

Results: Participants in the inservice training program were required to submit copies of the lesson materials they developed and used in their classes. Copies of the lesson plans which accented various functional reading skills are on file with the instructors of the inservice program. The success participants had in implementing their lesson plans is partially determined from their evaluation of student performance and acceptance of the reading skill lessons. Appendix C summarizes by session the positive and negative student-oriented participant comments. Analysis of the results revealed that:

(1) Out of a total of 154 comments 100, or 64.9 percent, were positive. Of this number 72.1 percent dealt with student performance.

(2) The proportion of negative acceptance comments (26 percent) was very similar to the proportion of positive acceptance comments (28 percent).

(3) Respecting the first session, slightly more negative comments (14) were voiced than were positive comments (12).

(4) Sessions 5 and 7 of the student evaluations had the highest proportion of positive comments (both 91 percent).

c. Objective c: Participants' confidence in their perceived competency to teach functional reading skills will increase

Results: The results of the pre-post test comparison of the participants' responses to their perceived competency to teach functional reading skills (seventh and ninth grade emphasis) is shown in Appendix D. Chi square tests of significance were conducted on each of the items of the sub tests to determine if differences existed between the participants pre versus post responses. Analysis of the results showed that:

(1) Participants felt less sure of themselves (.05 level of significance) after the workshop regarding response No. 1 of the Teacher Attitude Guide respecting student creativeness. They shifted direction saying students do need to read books though they may be creative. Of the remaining nine items no significant differences in pre-post test responses were found. This seemed to infer participant attitude over the course of the workshop didn't change. For example, they were consistent in believing that students should be given the right to be wrong.

(2) The inservice program seemingly affected the participants' perceptions of their competency to teach given reading skills. Significant pre-post test differences were found for every item of the five scales that dealt with seventh and ninth grading reading skill objectives. At the conclusion of the nine-week program, the participants seemed convinced that they could teach the specific reading skills on all objectives in the five skill areas.

d. Objective d: Participants' attitudes toward the teaching of functional reading skills in their content classes will increase

Results: Analysis of the participants' overall and individual sessions (Appendix A) of the inservice training program suggests that the participants slowly became more convinced that functional reading skills should be taught in their classrooms. Seemingly, personal growth developed and greater insight into the problems students encounter. The major concern expressed by the participants was one of trying to relate or prepare material that could be used in their classrooms.

III. SUMMARY AND RECOMMENDATIONS

The review of the analyses of the data collected on participant and student performance related to the inservice training project suggests the following conclusions:

A. The workshop met its formative goals of:

1. Building teacher confidence in their perceived ability to teach functional reading skills, and

2. Encouraging teachers in the content areas of mathematics, science, and social studies to teach functional reading skills in their classrooms

B. The West Lake Junior High School has fulfilled its program goal of developing and implementing a viable inservice training program of teaching functional reading skills to content teachers.

C. The impact of the workshop's effect on improving seventh, eighth, and ninth grade achievement in reading, mathematics, and English or language arts is yet to be determined. Preliminary comparisons of ninth grade treatment students achievement performance compared to comparison students performance is inconclusive.

To fully evaluate the effect of the treatment on student performance it is recommended that:

A. Achievement baseline data be collected on the seventh, eighth, and ninth grade students. This would insure applying the pre-post one group quasi experimental research design. Consideration can be given to using as baseline data district test results of students tested previous to the introduction of the inservice program in the school.

B. Consideration be given to developing and administering criterion related tests on the specific reading skills to seventh, eighth, and ninth graders following the teaching of the given reading skills. Comparison of results to the established criterion would reveal how successful the concepts had been taught and learned.

It is further recommended that personnel in the school use the results of the TASK item analyses to zero in on reading deficits that are evident in ninth grade achievement performances.

A word of caution is made respecting student evaluation during the second year of the project. The fact that seventh and eighth graders have been exposed to the reading skill instruction nullifies using as baseline or pre-treatment data the results of the proposed 1975 fall testings.

APPENDIX A

TABLE 1

9th Grade Reading Achievement (TASK) of Treatment and Comparison Students - Global Meaning

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
15	65	53	+12	.05
21	43	38	+ 4	NS
27	34	38	- 4	NS
34	54	40	+12	.05
39	54	41	+13	.05
40	52	39	+13	.05
Avg.	50	41	+ 9	.05

National % = 56

TABLE 2

9th Grade Reading Achievement (TASK) of Treatment and Comparison Students - Understanding Explicit Detail

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
1	86	80	+ 6	NS
2	85	81	+ 4	NS
3	86	77	+ 9	.05
4	84	78	+ 6	NS
5	76	73	+ 3	NS
6	77	75	+ 2	NS
7	68	64	+ 4	NS
11	77	65	+12	.05
12	79	72	+ 7	NS
16	85	77	+ 8	.05
22	88	79	+ 9	.05
23	79	73	+ 6	NS
26	60	56	+ 4	NS
29	77	68	+ 9	.05
30	62	55	+ 7	NS
31	46	36	+10	.05
33	43	37	+ 6	NS
36	33	33	0	NS
Avg.	72	66	+ 6	NS

National % = 78

TABLE 3

9th Grade Reading Achievement (TASK) of
Treatment and Comparison Students -
Meaning of Implicit Detail

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
8	67	65	+ 2	NS
9	72	64	+ 8	NS
14	67	62	+ 5	NS
18	78	66	+12	.05
20	71	55	+16	.05
24	83	73	+10	.05
25	73	67	+ 6	NS
32	47	41	+ 6	NS
35	50	49	+ 1	NS
38	59	48	+11	.05
41	35	31	+ 4	NS
Avg.	64	56	+ 8	NS

National % = 72

TABLE 4

9th Grade Reading Achievement (TASK) of
Treatment and Comparison Students -
Inference and Logical Analysis

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
10	79	73	+ 6	NS
17	88	75	+13	.05
19	78	66	+12	.05
28	39	33	+ 6	NS
37	61	49	+12	.05
42	33	30	+ 3	NS
Avg.	63	54	+ 9	NS

National % = 66

TABLE 5

9th Grade Reading Achievement (TASK) of
Treatment and Comparison Students -
Meaning from Context

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
43	67	48	+19	.05
44	82	68	+14	.05
45	74	63	+11	.05
46	68	56	+12	.05
47	55	43	+12	.05
48	58	49	+ 9	NS
49	69	52	+17	.05
50	53	40	+13	.05
51	58	43	+15	.05
Avg.	65	51	+14	.05

National % = 67

TABLE 6

9th Grade Reading Achievement (TASK) of
Treatment and Comparison Students -
Word Meaning

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
52	52	58	- 6	NS
53	51	52	- 1	NS
54	80	66	+14	.05
55	69	60	+ 9	.05
56	38	38	0	NS
57	31	27	+ 4	NS
58	63	57	+ 6	NS
59	62	43	+19	.05
60	75	62	+13	.05
61	55	44	+11	.05
62	75	64	+11	.05
63	42	36	+ 6	NS
64	29	34	- 5	NS
65	75	64	+11	.05
66	52	45	+ 7	NS
67	66	56	+10	.05
68	64	54	+10	.05
69	42	40	+ 2	NS
70	64	58	+ 6	NS
71	64	51	+13	.05
72	59	56	+ 3	NS
73	68	58	+12	.05
74	74	69	+16	.05
75	62	54	+ 8	NS
76	55	50	+ 5	NS
77	34	35	- 1	NS
78	39	36	+ 3	NS
Avg.	57	51	+ 6	NS

National % = 69

TABLE 7

9th Grade English Achievement (TASK) of
Treatment and Comparison Students -
Learning Skills

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
1	81	74	+ 7	NS
2	83	79	+ 4	NS
3	74	74	0	NS
4	79	70	+ 9	.05
5	81	80	+ 1	NS
6	43	37	+ 6	NS
7	74	74	0	NS
8	69	68	+ 1	NS
9	50	42	+ 8	
10	64	57	+ 7	NS
11	70	58	+12	.05
12	75	66	+ 9	.05
13	58	50	+ 8	NS
14	29	31	- 2	NS
15	47	40	+ 7	NS
Avg.	65	60	+ 5	NS

National % = 74

TABLE 8

9th Grade English Achievement (TASK) of
Treatment and Comparison Students -
Useage, Conventions

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
16	48	50	- 2	NS
17	52	48	+ 4	NS
18	72	68	+ 4	NS
19	71	62	+ 9	.05
20	47	44	+ 3	NS
21	69	59	+10	.05
22	61	61	0	NS
23	51	53	+ 4	NS
24	54	49	+ 5	NS
25	62	48	+14	.05
26	66	57	+ 9	.05
27	51	51	0	NS
28	68	59	+ 9	.05
29	81	65	+16	.05
30	79	69	+10	.05
31	39	31	+ 8	NS
32	72	61	+11	.05
33	61	53	+ 8	NS
34	59	57	+ 2	NS
35	32	29	+ 3	NS
36	55	47	+ 8	NS
Avg.	60	53	+ 7	NS

National % = 70

TABLE 9

9th Grade English Achievement (TASK) of Treatment and Comparison Students - Spelling

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
37	65	62	+ 3	NS
38	81	72	+ 9	.05
39	74	70	+ 4	NS
40	68	55	+13	.05
41	76	67	+ 9	.05
42	66	53	+13	.05
43	59	59	0	NS
44	60	56	+ 4	NS
45	43	42	+ 1	NS
46	80	73	+ 7	NS
47	46	40	+ 6	NS
48	58	54	+ 4	NS
49	53	51	+ 2	NS
50	44	40	+ 4	NS
51	62	50	+12	.05
Avg.	62	56	+ 6	NS

National % = 74

TABLE 10

9th Grade English Achievement (TASK) of Treatment and Comparison Students - Sentence Sensitivity

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
52	83	78	+ 5	NS
53	83	75	+ 8	.05
54	76	69	+ 7	NS
55	64	53	+11	.05
56	72	64	+ 8	NS
57	65	53	+12	.05
Avg.	74	65	+ 9	.05

National % = 81

TABLE 11

9th Grade English Achievement (TASK) of
Treatment and Comparison Students -
Paragraph Arrangement

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
58	82	70	+12	.05
59	58	49	+ 9	.05
60	51	42	+ 9	.05
61	78	65	+13	.05
62	83	72	+11	.05
63	70	56	+14	.05
64	68	53	+15	.05
65	69	53	+16	.05
66	82	70	+12	.05
67	66	61	+ 5	NS
68	61	51	+10	.05
69	59	48	+11	.05
Avg.	69	57	+12	.05

National % = 77

TABLE 12

9th Grade Mathematics Achievement (TASK) of
Treatment and Comparison Students -
Numbers, Symbols and Sets

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
3	72	63	+ 9	.05
9	81	72	+ 9	.05
13	82	74	+ 8	NS
22	68	61	+ 7	NS
29	27	23	+ 4	NS
32	50	46	+ 4	NS
47	68	56	+12	.05
Avg.	64	56	+ 8	NS

National % = 75

TABLE 13

9th Grade Mathematics Achievement (TASK) of
Treatment and Comparison Students -
Number Properties: Whole Numbers

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
1	86	78	+ 8	.05
2	88	78	+10	.05
4	64	52	+12	.05
5	2	3	- 1	NS
24	65	55	+10	.05
34	69	65	+ 4	NS
37	51	42	+ 9	NS
45	48	38	+10	.05
Avg.	59	51	+ 8	NS

National % = 79

TABLE 14

9th Grade Mathematics Achievement (TASK) of
Treatment and Comparison Students -
Common and Decimal Fractions

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
6	74	62	+12	.05
7	30	21	+ 9	NS
8	54	53	+ 1	NS
10	37	32	+ 5	NS
12	40	33	+ 7	NS
15	49	48	+ 1	NS
23	43	37	+ 6	NS
30	63	51	+12	.05
33	66	62	+ 4	NS
35	54	42	+12	.05
	45	34	+11	.05
Avg.	50	34	+11	.05

National % = 69

TABLE 15

9th Grade Mathematics Achievement (TASK) of
Treatment and Comparison Students -
Integers and Exponents

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
14	62	52	+10	NS
25	66	58	+ 8	NS
42	54	40	+14	.05
Avg.	61	50	+11	.05

National % = 73

TABLE 16

9th Grade Mathematics Achievement (TASK) of
Treatment and Comparison Students -
Mathematical Sentences

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
28	54	46	+ 8	NS
31	43	41	+ 2	NS
48	58	43	+15	.05
Avg.	52	43	+ 9	NS

National % = 71

TABLE 17

9th Grade Mathematics Achievement (TASK) of
Treatment and Comparison Students -
Geometry and Measurement

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
11	71	65	+ 6	NS
46	43	34	+ 9	NS
Avg.	57	50	+ 7	NS

National % = 64

TABLE 18

9th Grade Mathematics Achievement (TASK) of
Treatment and Comparison Students -
Ratio and Percent

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
16	70	56	+14	.05
17	73	64	+ 9	NS
36	63	49	+14	.05
38	27	24	+ 3	NS
41	32	26	+ 6	NS
Avg.	53	44	+ 9	NS

National % = 60

TABLE 19

9th Grade Mathematics Achievement (TASK) of
Treatment and Comparison Students -
Graphs, Probability and Statistics

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
18	68	55	+13	.05
19	70	55	+15	.05
20	50	43	+ 7	NS
21	66	56	+10	.05
27	51	50	+ 1	NS
Avg.	61	52	+ 9	NS

National % = 69

TABLE 20

9th Grade Mathematics Achievement (TASK) of Treatment and Comparison Students - Mathematical Reasoning

Item	% Correct Response West Lake	Kearns	% Diff.	Sig.
26	68	58	+10	NS
39	73	64	+ 9	NS
40	33	34	- 1	NS
43	70	53	+17	.05
Avg.	61	52	+ 9	NS

National % = 74

APPENDIX B

WEST LAKE JUNIOR HIGH SCHOOL

AN INTERDISCIPLINARY INSERVICE MODEL FOR TEACHING READING IN THE CONTENT AREAS - GRADES 7-9

PARTICIPANT OVERALL EVALUATION OF THE TEN SESSION INSERVICE PROGRAM

I. POSITIVE ASPECTS (40)

A. The Workshop Itself (9 comments)

1. "Workshop one of the most interesting and informative taken in education."
2. "One of the most practical courses I have taken - practical."
3. "Best workshop taken over past 20 years - due to amount of ideas and materials presented."
4. "Workshop has been fun, challenging, frustrating, helpful, time consuming, stimulating."
5. "Course designed with classroom teacher in mind."
6. "Saw merit of course though at first felt it was merely presenting another reading program."
7. "Excellent and worth the time and preparation in that it was more adaptable in the different approaches presented."
8. "Class stimulating and thought provoking."
9. "Workshop a valuable, positive experience."

B. Individual Growth and Benefit (7 comments)

1. "As a teacher I learned."
2. "Pre-competency objectives helped me realize what new skills and techniques I could employ."
3. "I experienced significant personal growth - especially with long range implications."
4. "Good for self evaluation."
5. "Course helped to motivate me."
6. "Workshop has and will affect my teaching."
7. "Sessions have helped me become more word conscious and hopefully a better teacher."

C. Content (7 comments)

Comments centered on topics liked best e.g.

1. Word attack skills (5 comments)
2. Understanding and following directions (4 comments)
3. Critical thinking and interpretation (2 comments)
4. Determining fact from opinion (2 comments)
5. Vocabulary (2 comments)
6. SSSD formula (1 comment)
7. Study habits (1 comment)

D. Participant Interaction and Course Feedback (5 comments)

1. "Liked teacher feedback though not at first."
2. "Liked feedback."
3. "Workshop served purpose of getting teacher in a department to share teaching methods and skills."
4. "Good to share with fellow teachers and get their ideas."
5. "Enjoyable course - stimulating and helpful ideas from instructors and other teachers."

E. Student Implications (4 comments)

1. "Mental training course offered is useful - difficult though to indicate in young minds how useful it really is."
2. "Made me aware of student limitations in reading."
3. "I feel workshops have had a tremendous impact on students of our school."
4. "The course affected my teaching techniques - especially meeting needs of students."

F. Workshop Material (5 comments)

1. "What I liked best and think most effective was working out assignments similar to ones we made for students."
2. "Workshop material interesting."
3. "Last half of each session valuable - helped to drive objective home and kept there."
4. "Materials developed with specific group of students in mind - they were abundant and thorough."
5. "Lessons relevant personally and applied to classroom presentation."

G. Instructors (3 comments)

1. "Liked peers teaching peers - on one another's level..."
2. "Instructors well prepared and gave individual help."
3. "Instructors great - good attitude."

II. NEGATIVE ASPECTS (9)

A. Lessons - Sessions - Materials (5 comments)

1. "Early lessons and assignments didn't seem relevent."
2. "First session confusing to those with no reading background."
3. "Time consuming workshop based on time spent in preparation."
4. "After first two sessions I felt lost and wondering how course objectives could be met - saw later how e.g. build on existing reading skills using our content material."
5. "Materials - at times not sure what to do with them."

B. Implementation (3 comments)

1. "Implementation of ideas - emphasized pure memorization and offered little to the students ability to think for himself."
   - "math students accept each lesson as a "genuine chore."
2. To implement objectives in math not easy due to text book limitations.
   - "how to gain reading skills reading drab, monotonous, uninteresting sentences..."
3. "Difficult to implement one technique per week even though recommendation was made as to only twice per week."

C. Student Implications (1 comment)

1. "By having three days involved, students were saturated with same general procedure all at once - seek to stagger."

III. RECOMMENDATIONS (13)

A. Time and Length Workshop (6 total comments)

1. "Conduct workshop nearer to the opening of the school year." (2 comments)
2. "Consider lengthening workshop to 20 weeks meeting as a group every two weeks instead of each week." (3 comments)

3. "Consider another time an interdisciplinary group could meet in lieu of having two groups on separate nights."

B. Materials (5 comments)

1. "Bind all materials used in workshop in book or pamphlet forms."
2. "Make provision for having certain materials, e.g. guidelines, GPR's etc. easily duplicated for classroom use."
3. "Lessons should be further developed and expanded through an entire year's curriculum instead of five day stints."
4. "Use summer to let teachers develop activities for classroom use."
5. "Continue to provide ideas how classroom teacher can help students improve school skills."

C. Participants (2 comments)

1. "Provide workshop for all teachers."
2. "It would be good to meet in groups regularly to tie programs more together - profit from each other."

WEST LAKE JUNIOR HIGH SCHOOL

AN INTERDISCIPLINARY INSERVICE MODEL FOR TEACHING READING IN THE CONTENT AREAS - GRADES 7-9

PARTICIPANT EVALUATION OF EACH OF THE TEN SESSION INSERVICE PROGRAM

I. SESSION 1 (18)

A. Categorization of Comments

1. Session was confusing (8 comments)
   a. comments used such words or phrases as "insecurity," "bewilderment", "felt uncomfortable" as they pertained to purpose of workshop.

2. Value of Workshop (4 comments)
   a. comments dealt with teaching value or how workshop would help in understanding student needs.

3. Session Preventation (3 comments)
   a. comments said session was good and instructors were positive.

4. Session Lesson Content (3 comments)
   a. comments stated content was worthwhile, adaptable with assignment being stimulating.

II. SESSION 2 (21)

A. Categorization of Comments

1. Session Lesson Content (6 comments)
   a. example of comments were (1) study guide most helpful, TV film very good, lesson related to classroom and newspaper evaluation difficult to do.

2. Participant Interaction and Feedback (5 comments)
   a. examples of comments were (1) good but drawn out, not too helpful, (2) helpful in preparing my assignment.

3. Student Assignment (4 comments)
   a. Three comments centered on the concern of application in the classroom and how one helps students not at grade level. The fourth comment pertained to liking the assignment.

4. Session Structure (4 comments)
   a. two comments were positive stating presentation was good. One said presentation a little too rushed while the last comment was a suggestion to have the session format focus on forming and sharing more new ideas.

5. Instructors (2 comments)
   a. Both comments said outstanding instructors.

III. SESSION 3 (22)

A. Categorization of Comments

1. Session Lesson Content (17 comments)
   a. GRP valuable (4 comments)
   b. good material and practical (4 comments)
   c. assignments good (3 comments)
   d. got many new ideas (3 comments)
   e. has good application (2 comments)
   f. programmed book good (1 comment)

2. The Session Itself (3 comments)
   a. better and more productive (2 comments)
   b. my favorite (1 comment)

3. Miscellaneous (2 comments)
   a. helped me see ways I could help pupils in their reading (1 comment)
   b. feedback from peers informative and helpful (1 comment)

IV. SESSION 4 (11)

A. Categorization of Comments

1. Programmed Word Attack for Teachers (7 comments)
   a. comments ranged from comprehensive, informative, valuable, like getting it to keep, opened understanding, helpful in learning about spelling and pronounciation to feeling frustrated due to forgetfulness (1 comment)

2. Session Format and Content (4 comments)
   a. lot of material - difficult to digest in one time.
   b. presentation gave good directions.
   c. session most pragmatic, valuable and constructive.
   d. liked GRP for classroom use.

V. SESSION 5 (21)

A. Categorization of Comments

1. Session Content and Materials (8 comments)
   a. Four comments dealt with liking the Jabberwocky Poem exercise while the other four related to the practical aspects of the SSSD formula.

2. Session Presentation (6 comments)
   a. such expressions as well done (1), very practical (4), and each session getting more enjoyable (1) were voiced.

3. Application of Materials (3 comments)
   a. have difficulty in applying (2 comments)
   b. can see value in applying (1 comment)

4. Feedback (2 comments)
   a. "good" was the head of the comments.

5. Programmed Reference Work (2 comments)
   a. value and worthwhileness reference indicated.

VI. SESSION 6 (19)

A. Categorization of Comments

1. Session Content and Materials (1 comment)
   a. Comments made were all positive using such expressions as helpful (1), valuable tips (1), good (1), useful information (1), very practical (2), liked handouts (2), and got different slants (2).

2. Course Instructors (3 comments)
   a. Instructors helpful (2) and gave clear directions on assignment (1).

3. Session Presentation (2 comments)
   a. good (1), but a little long (1).

4. Session Feedback (2 comments)
   a. valuable and liked.

5. Session Assignment (2 comments)
   a. a little vague (1) and has implication for classroom (1).

VII. SESSION 7 (28)

A. Categorization of Comments

1. Session Content (9 comments)
   a. comments were: excellent (1), less practical than others (1), some confusion on ideas relating to activity (1), personally beneficial (1), score high on practical (1), useful and valuable (1), provide more help for classroom application (1), activity worthwhile (1) and difficulty in applying (1).

2. Session Material (6 comments)
   a. comments were: thought provoking (1), big help (1), exercise interesting (1), practical (1), good forscence (2).

3. Session Feedback (4 comments)
   a. comments were: liked sharing (3), and limit to 5-6 minutes each (1).

4. Session Assignments (4 comments)
   a. comments were: laborious (1), one of best so far (1), valuable (1), has classroom implications (1).

5. Session Instructors (3 comments)
   a. comments were: helpful (2) and good (1).

6. Session Presentation (2 comments)
   a. comments were: one of better sessions (1) and good beginning or introduction to subject (1).

VIII. SESSION 8 (13)

A. Categorization of Comments

1. Session Lesson Material and Content (7 comments)
   a. comments were: good use of pictures (2), enjoyed slides (1), practical - gives specifics (1), divided page exercise

valuable (1), plan to develop vocabulary sheet for each class lesson unit (1) and useful in pointing out new ideas (1).

2. Session Presentation (5 comments)
   a. comments were: excellent - helpful (1), one of the best (1), enjoyable (1), practical (1), and group process helpful in selecting action words, synonyms and meanings (1).

IX. SESSION 9 (17)

A. Categorization of Comments

1. Session Content (6 comments)
   a. comments were: good and practical (2), not as practical as others (1), interesting (1), not helpful for students with poor study habits (1) don't agree with grouping of habits (1).

2. Session Feedback (3 comments)
   a. comments were: good (1), liked (1) and interesting (1).

3. Session Lesson Material (3 comments)
   a. comments were: excellent (1), useful (1), and liked (1).

4. Session Lesson Application (2 comments)
   a. comments were: raised other checklist possibilities in math (1), no application between two exercises (1).

5. Personal (2 comments)
   a. comments were: learned of my own limitations (1), and lesson had personal implications (1).

6. Session Lesson Assignments (1 comments)
   a. favor once per week (1).

X. SESSION 10 (9)

A. Categorization of Comments

1. Session Presentation and Content (7 comments)
   a. comments were: informative (1), interesting (1), useful (1), well done (1), most beneficial (1), impressed with presentation (1), and another valuable lesson (1).

2. Lesson Feedback (2 comments)
   a. comments were: valuable (1). and interesting (1).

APPENDIX C

AN INTERDISCIPLINARY IN-SERVICE MODEL FOR TEACHING READING IN THE CONTENT AREAS

PARTICIPANT EVALUATION OF STUDENT WORK IN FUNCTIONAL READING SKILL ASSIGNMENTS

I. SESSION 1 (26)

A. Positive Comments (12)

1. Performance (5)
   a. did well, fair to good, very good (3), could pick out facts (1), anticipated comments (1).

2. Acceptance (6)
   a. quite good (1), enthused (1), taken seriously (1), considered interesting (1), quite responsive (1), responded well (1).

3. Feedback (1)
   a. meaningful (1).

B. Negative Comments (14)

1. Performance (9)
   a. hesitant with answers (1), motivation lacking (1), difficulty in immersing in situation (1), vague answers (1), not overwhelming (1), had difficulty (3), students with problems did not work (1).

2. Assignment (5)
   a. just one more (1), difficult to relate to math (1), too long for class period (1), limited background (1), apprehensive (1).

II. SESSION 2 (25)

A. Positive Comments (14)

1. Performance (9)
   a. handled questions (1), did well on ad section (1), 95 % got #5 correct (1), students thinking more critically (1), used science evaluation form critically (1), answered question on zoo well (1), only one or two had difficulty on satire (1), all students ended up with plus points (1), performance was good (1).

2. Acceptance (5)
   a. enjoyed activity (3), liked "Critical Thinking" film (1), thought it was fun (1).

B. Negative Comments (11)

1. Performance (10)
   a. lacked listening ability (1), many pupils completely lost (1), a number who couldn't predict future events (2), a number gave up at the end (1), had difficulty on #5 (1), many disagreed on fact vs. opinion (2), skills of non readers not improved (1), difficulty in picking out exaggerations (1).

2. Acceptance (1)
   a. assignment a genuine chore.

III. SESSION 3 (16)

A. Positive Comments (10)

1. Performance (10)
   a. scored 6 or better (10 possible) on fact and idea quiz (1), all found examples of exaggerations and opinions (1), GRP & GRP mapping worked out beautifully in science (1), pleased with Biology responses on regular GRP (1), reading comprehension -- first time low, 2nd time tremendous improvement (1), identified main ideas of Arab article (1), majority missed less than two questions, none more than four (1), even lower skilled benefitted from unit (1), recall was good (2).

B. Negative Comments (6)

1. Performance (5)
   a. most couldn't handle mapping (1), some cannot extract meaning of words for themselves (1), microscope - several facts obtainable from GRP mapping but not remembered by students (1), some noticeably bored (1), somewhat disappointed in total response to news ad.

2. Acceptance (1)
   a. 8th science didn't enjoy GRP mappings as much (1).

IV. SESSION 4 (8)

A. Positive Comments (5)

1. Performance (4)
   a. needed lots of help but worked hard (1), did well on word concepts (1), most did well on critical thinking and comprehension skills (1), seemed to be able to do assignment given (1).

2. Acceptance (1)
   a. enthusiastic (1)

B. Negative Comments (3)

1. Acceptance (3)
   a. SSSD method - not accepting of (1) or thought 2nd grade level (1), disinterested (1).

V. SESSION 5 (11)

A. Positive Comments (10)

1. Performance (8)
   a. few came up and asked for help (1) little difficulty in pronouncing words (1), seemed to understand SSSD formula and purpose (1), gaining ability to think critically and to comprehend (1), recognize suffixes and prefixes (1), dictionary conscious - slower students seemed to make most improvement (1), used formula with help (1), greater awareness by many of reading skills (1).

2. Acceptance (2)
   a. enjoyed activity (1), 7th graders excited and easily slipped action phrases into proper order (1).

B. Negative Comments (1)

1. Acceptance (1)
   a. 9th graders in geography felt activity below their standard of intellect (1).

VI. SESSION 6 (17)

A. Positive Comments (9)

1. Performance (7)
   a. generally able to handle worksheet (1), only 40 out of 150 failed to read all directions of exercise (1), more careful in following instructions (1), progress evident in learning how to use key

words in following written directions (1), could follow rewritten instructions (1), about 80% followed instructions real well (1), did well on exercise (1).

2. Acceptance (2)
   a. enjoyed math exercise (1), game instructions interesting (1).

B. Negative Comments (8)

1. Performance (6)
   a. some math words not understood by students at this level (1), most don't follow written directions very well (1), out of 26, 22 did not know what 2nd step of directions was (1), "goofed" and did not follow math instructions properly (1), only one or two could follow written instructions of manual (1), only about 1/3 of class understood directions (1).

2. Acceptance (2)
   a. witnessed sweet condescension to open rebellion on exercise - why read in math? (1), didn't seem to feel it was important to follow directions (1).

VII. SESSION 7 (22)

A. Positive Comments (20)

1. Performance (15)
   a. for most part thought assignment not too difficult (1), above average handled without problem (1), most were able to pick out right words for blanks (1), seemed to follow guide material on board (1), feel they are trying to read and follow directions better (1), have much more vocabulary know how than I had given credit for (1), seem to be familiar with prefixes, roots & suffixes but not well enough (1), became aware of context when studying and learning vocabulary words (1), quickly figured out the word from the meaning of the word part (1), much more word conscious (1), class average on vocabulary unit test was 82% (1), located roots and affixes and were able to get meaning of words from context (1), completed assignment correctly though they took longer (1), most did all right.

2. Acceptance (5)
   a. stimulating to most (1), enjoyable (3), interesting (1).

B. Negative Comments (2)

1. Performance (1)
   a. some had trouble with "new" word section (1).

2. Acceptance (1)
   a. questions raised about word attack chart.

VIII. SESSION 8 (17)

A. Positive Comments (12)

1. Performance (8)
   a. accelerated class claimed they knew better than half the words (1), both classes did rather well (1), 7th graders didn't have difficulty finding words in puzzle (1), for the most part they were ablt to grasp ideas of roots, etc. (1), felt they did well (1), and learned a lot (1), majority were ablt to figure words from roots, suffixes and prefixes (1), did well in making own words and using words discussed (1).

2. Acceptance (4)
   a. enjoyed exercise (4).

B. Negative Comments (5)

1. Performance (4)
   a. some wanted instructor to define words (1), some didn't know what to do to identify a prefix or suffix (1), they had much more difficulty in using words in sentences (1), 7th graders a little slow in using dictionary (1).

2. Acceptance (1)
   a. both classes frustrated out in first 20 minutes of class.

IX. SESSION 9 (12)

A. Positive Comments (8)

1. Performance (5)
   a. most learned meanings and can convert within a given type of measure (1), improvement in willingness to follow directions (1), becoming more proficient in following instructions (1), some of slowest students trying the hardest (1), they learned to understand root words (1).

2. Acceptance (3)
   a. enjoyed unit (3)

B. Negative Comments (4)

1. Performance (2)
   a. some were hasty in answering - boredom or not reading material may account (1), question retentiveness of lesson (1).

2. Acceptance (2)
   a. workshop not helpful in helping students with class problems (1), they answered checklist according to what they should be doing not are doing (1).

APPENDIX D

TABLE 1

PRE-POST TEST RESPONSE OF TEACHERS OF 7th AND 9th GRADE STUDENTS ON THE "TEACHER'S ATTITUDE GUIDE"

Item	Testing	% Within Ratings Always=1	Sometimes=2	Never=3	Mean	X^2	Sig.
1	pre	-	5.00	95.00	2.95	6.06	.05
	post	-	36.84	63.16	2.63		
2	pre	0.20	55.00	25.00	2.05	1.91	NS
	post	5.26	63.16	31.58	2.26		
3	pre	5.00	5.00	90.00	2.85	3.05	NS
	post	-	21.05	78.95	2.79		
4	pre	26.31	42.11	31.58	2.05	7.73	NS
	post	52.63	47.37	-	1.47		
5	pre	42.11	21.05	36.84	1.95	1.28	NS
	post	47.37	31.58	21.05	1.74		
6	pre	25.00	40.00	35.00	2.10	.051	NS
	post	26.31	42.11	31.58	2.05		
7	pre	50.00	20.00	30.00	1.80	1.38	NS
	post	52.63	31.58	15.79	1.63		
8	pre	75.00	20.00	5.00	1.30	1.52	NS
	post	68.42	31.58	-	1.32		
9	pre	55.00	15.00	30.00	1.75	2.52	NS
	post	63.16	26.31	10.53	1.47		
10	pre	85.00	5.00	10.00	1.25	2.00	NS
	post	94.74	5.26	-	1.05		

TABLE 2

PRE-POST TEST RESPONSES OF TEACHERS OF 7th AND 9th GRADE STUDENTS ON THEIR COMPETENCY TO TEACH 7th GRADE READING STUDY SKILLS

Skill	Testing	% Within Ratings 1	2	3	4	5	Mean	X^2	Sig.
1	pre	-	5.3	31.6	15.7	47.4	4.05	32.23	.001
	post	15.0	80.0	-	5.0	-	1.95		
2	pre	5.2	31.6	36.8	21.1	5.3	2.89	21.58	.001
	post	60.0	40.0	-	-	-	1.40		
3	pre	10.5	26.3	15.8	31.6	15.8	3.16	16.56	.01
	post	57.9	36.8	5.3	-	-	1.47		
4	pre	10.5	5.3	15.8	36.8	31.6	3.74	24.50	.001
	post	30.0	60.0	10.0	-	-	1.80		
5	pre	-	15.8	21.1	31.6	31.6	3.79	23.77	.001
	post	20.0	70.0	10.0	-	-	1.90		
6	pre	5.3	31.6	10.5	21.1	31.6	3.42	12.45	.05
	post	25.0	60.0	10.0	5.0	-	2.00		
7	pre	5.3	5.3	26.3	31.6	31.6	3.79	25.04	.001
	post	40.0	50.0	5.0	5.0	-	1.75		
8	pre	-	36.8	21.1	10.5	31.6	3.37	14.51	.01
	post	35.0	50.0	10.0	5.0	-	1.85		
9	pre	5.3	5.3	36.8	36.8	15.8	3.53	19.13	.001
	post	45.0	25.0	30.0	-	-	1.85		
10	pre	-	21.1	15.8	26.3	36.8	3.79	20.96	.001
	post	42.1	36.8	21.1	-	-	1.70		

TABLE 3

PRE-POST TEST RESPONSES OF TEACHERS OF 7th AND 9th GRADE STUDENTS ON THEIR COMPETENCY TO TEACH 9th GRADE READING STUDY SKILLS

		% Within Ratings							
Skill	Testing	1	2	3	4	5	Mean	X^2	Sig.
1	pre	-	10.5	26.3	36.8	26.3	3.79	27.33	.001
	post	26.3	68.4	5.3	-	-	1.70		
2	pre	5.3	26.3	36.8	21.1	10.5	3.58	22.90	.001
	post	60.0	40.0	-	-	-	1.40		
3	pre	5.3	-	36.9	42.1	15.8	3.63	29.34	.001
	post	30.0	60.0	10.0	-	-	1.80		
4	pre	5.3	31.6	15.8	26.3	21.1	3.26	14.65	.01
	post	45.0	45.0	5.0	5.0	-	1.70		
5	pre	-	21.1	21.1	36.8	21.1	3.58	18.15	.01
	post	25.0	60.0	10.0	5.0	-	1.80		
6	pre	5.3	31.6	15.8	21.1	26.3	3.32	13.75	.01
	post	35.0	55.0	5.0	5.0	-	1.80		
7	pre	5.3	21.1	31.6	10.5	31.6	3.42	18.09	.01
	post	52.6	36.8	5.3	5.3	-	1.55		
8	pre	5.3	15.8	26.3	36.8	15.8	3.42	16.52	.01
	post	40.0	30.0	30.0	-	-	1.90		
9	pre	-	21.1	26.3	26.3	26.3	3.58	22.67	.001
	post	31.6	63.2	5.3	-	-	1.65		

TABLE 4

PRE-POST TEST RESPONSES OF TEACHERS OF 7th AND 9th GRADE STUDENTS ON THEIR COMPETENCY TO TEACH 7th GRADE CRITICAL AND INTERPRETIVE READING SKILLS

Skill	Testing	% Within Ratings 1	2	3	4	5	Mean	X^2	Sig.
1	pre	21.1	21.1	26.3	31.6	-	2.68	13.07	.05
	post	63.2	31.5	5.3	-	-	1.42		
2	pre	10.5	26.3	36.8	21.1	5.3	2.84	17.67	.01
	post	21.1	78.9	-	-	-	1.79		
3	pre	5.3	21.1	36.8	31.6	5.3	3.11	14.53	.01
	post	26.3	57.9	15.8	-	-	1.89		
4	pre	5.3	26.3	31.6	26.3	10.5	3.11	14.73	.01
	post	47.4	36.8	15.8	-	-	1.68		
5	pre	10.5	15.8	31.6	36.8	5.3	3.11	14.78	.01
	post	36.8	47.4	15.8	-	-	1.79		
6	pre	5.3	26.3	31.6	26.3	10.5	3.11	13.24	.05
	post	31.6	52.6	15.8	-	-	1.84		
7	pre	26.3	15.8	31.6	15.8	10.5	2.68	10.25	.05
	post	57.9	31.6	10.5	-	-	1.53		

TABLE 5

PRE-POST TEST RESPONSES OF TEACHERS OF 7th AND 9th GRADE STUDENTS ON THEIR COMPETENCY TO TEACH 9th GRADE CRITICAL AND INTERPRETIVE READING SKILLS

Skill	Testing	% Within Ratings 1	2	3	4	5	Mean	X^2	Sig.
1	pre	5.3	21.1	47.4	26.3	-	.94	16.29	.01
	post	31.6	57.9	10.5	-	-	1.79		
2	pre	-	21.1	42.1	26.3	10.5	3.26	18.59	.01
	post	22.2	66.7	11.1	-	-	1.89		
3	pre	-	15.8	36.8	36.8	10.5	3.42	19.16	.001
	post	22.2	61.1	16.7	-	-	1.94		
4	pre	5.3	26.3	36.8	26.3	5.3	3.00	20.38	.001
	post	36.8	63.2	-	-	-	1.63		
5	pre	5.3	26.3	36.8	31.6	-	2.95	24.27	.001
	post	73.7	26.3	-	-	-	1.26		
6	pre	10.5	21.1	26.3	31.6	10.5	3.11	14.81	.01
	post	42.1	47.4	10.5	-	-	1.68		
7	pre	10.5	21.1	26.3	26.3	15.8	3.16	16.84	.01
	post	42.1	52.6	5.3	-	-	1.63		

TABLE 6

PRE-POST TEST RESPONSES OF TEACHERS OF 7th AND 9th GRADE STUDENTS ON THEIR COMPETENCY TO TEACH 7th AND 9th GRADE WORD IDENTIFICATION SKILLS

	Skill	Testing	% Within Ratings 1	2	3	4	5	Mean	X^2	Sig.
7th Grade	1	pre	5.0	-	20.0	55.0	20.0	3.85	28.80	.001
		post	20.0	60.0	20.0	-	-	2.0		
	2	pre	-	15.0	40.0	15.0	30.0	3.6	19.73	.001
		post	20.0	60.0	20.0	-	-	2.0		
	3	pre	-	10.0	15.0	30.0	45.0	4.10	25.07	.001
		post	5.0	75.0	30.0	-	-	2.25		
	4	pre	-	25.0	25.0	15.0	35.0	3.60	16.67	.01
		post	25.0	50.0	25.0	-	-	2.00		
	5	pre	-	30.0	30.0	20.0	20.0	3.30	18.47	.01
		post	35.0	55.0	10.0	-	-	1.75		
	6	pre	-	15.0	30.0	20.0	35.0	3.75	22.57	.001
		post	30.0	55.0	15.0	-	-	1.85		
9th Grade	7	pre	-	30.0	25.0	-	45.0	3.60	17.49	.01
		post	20.0	70.0	10.0	-	-	1.90		
	1	pre	-	10.0	35.0	35.0	20.0	3.65	22.88	.001
		post	15.0	65.0	20.0	-	-	1.90		
	2	pre	-	20.0	20.0	40.0	20.0	3.50	19.68	.001
		post	25.0	50.0	25.0	-	-	2.00		
	3	pre	-	25.0	15.0	35.0	25.0	3.60	19.03	.001
		post	20.0	60.0	20.0	-	-	2.00		
	4	pre	-	30.0	20.0	15.0	35.0	3.55	16.71	.01
		post	30.0	45.0	25.0	-	-	1.95		

TABLE 7

PRE-POST TEST RESPONSES OF TEACHERS OF 7th AND 9th GRADE STUDENTS ON THEIR COMPETENCY TO TEACH 7th AND 9th GRADE VOCABULARY SKILLS

			% Within Ratings						
Skill	Testing	1	2	3	4	5	Mean	X^2	Sig.
7th Grade									
1	pre	-	20.0	35.0	20.0	25.0	3.50	24.77	.001
	post	40.0	55.0	5.0	-	-	1.65		
2	pre	-	-	30.0	45.0	25.0	3.95	30.40	.001
	post	20.0	60.0	20.0	-	-	2.00		
3	pre	-	10.0	10.0	35.0	45.0	4.15	27.67	.001
	post	10.0	70.0	20.0	-	-	2.10		
4	pre	10.0	20.0	20.0	15.0	35.0	3.45	17.04	.01
	post	45.0	45.0	10.0	-	-	1.65		
5	pre	-	30.0	15.0	30.0	25.0	3.50	22.00	.001
	post	45.0	50.0	5.0	-	-	1.60		
6	pre	-	30.0	10.0	40.0	20.0	3.50	20.47	.001
	post	35.0	55.0	10.0	-	-	1.75		
9th Grade									
1	pre	-	21.1	21.1	31.6	26.3	3.63	24.06	.001
	post	40.0	55.0	5.0	-	-	1.65		
2	pre	-	10.5	21.1	42.1	26.3	3.84	26.89	.001
	post	35.0	55.0	10.0	-	-	1.75		
3	pre	-	5.3	10.5	42.1	42.1	4.21	30.48	.001
	post	20.0	65.0	15.0	-	-	1.95		
4	pre	-	15.8	31.6	31.6	21.1	3.58	23.11	.001
	post	20.0	70.0	10.0	-	-	1.90		
5	pre	-	15.8	15.8	36.8	31.6	3.84	24.19	.001
	post	15.0	75.0	10.0	-	-	1.95		
6	pre	-	10.5	31.6	10.5	36.8	3.42	26.96	.001
	post	50.0	45.0	5.0	-	-	1.55		

TABLE 8

PRE-POST TEST RESPONSES OF TEACHERS OF 7th AND 9th GRADE STUDENTS ON THEIR COMPETENCY TO TEACH 7th AND 9th GRADE READING COMPREHENSION SKILLS

			% Within Ratings							
	Skill	Testing	1	2	3	4	5	Mean	X^2	Sig.
7th Grade	1	pre	-	40.0	15.8	21.1	21.1	3.21	22.99	.001
		post	60.0	40.0	-	-	-	1.40		
	2	pre	-	21.1	15.8	31.6	10.5	3.11	18.21	.01
		post	45.0	50.0	5.0	-	-	1.55		
	3	pre	5.3	26.3	26.3	21.1	21.1	3.26	22.99	.001
		post	60.0	40.0	-	-	-	1.40		
	4	pre	-	10.5	36.8	26.3	26.3	3.68	28.56	.001
		post	30.0	65.0	5.0	-	-	1.75		
	5	pre	-	10.5	31.6	21.1	36.8	3.84	28.63	.001
		post	30.0	65.0	5.0	-	-	1.75		
9th Grade	1	pre	-	-	47.4	26.3	26.3	3.79	27.92	.001
		post	10.0	70.0	20.0	-	-	2.10		
	2	pre	5.3	31.6	26.3	10.5	26.3	3.21	19.86	.001
		post	45.0	55.0	-	-	-	1.55		
	3	pre	-	15.8	42.1	15.8	26.3	3.53	21.03	.001
		post	35.0	50.0	15.0	-	-	1.80		
	4	pre	-	31.6	26.3	26.3	15.8	3.26	22.99	.001
		post	40.0	60.0	-	-	-	1.60		
	5	pre	-	36.8	15.8	26.3	21.1	3.32	20.79	.001
		post	35.0	65.0	-	-	-	1.65		
	6	pre	-	26.3	26.3	15.8	31.6	3.53	19.16	.001
		post	30.0	60.0	10.0	-	-	1.80		
	7	pre	-	5.3	42.1	31.8	21.1	3.68	28.86	.001
		post	20.0	70.0	10.0	-	-	1.90		

TEACHERS' OVERALL EVALUATIONS

Math Department

Max Eisen
Bert Jensen
Ron Mountain
James W. Sanderson
Reed Walker

OVERALL EVALUATION

Submitted herewith are presentations made to my classes of suggestions from the reading workshop. It is hoped that the foregoing evaluation of the total workshop would be interpreted, in some areas, as also suggested and not critical in a manner of speaking.

I would like to examine the workshop from two types of analysis: one from a traditional outlook, the other from the standpoint of technique.

From the standpoint of the first type, the handing down of information by word of mouth proved interesting to most teachers involved in the program, including myself, and the presentation of material was provocative. The implementation of ideas received, however, provided most students with pure memorization and offered little to the student's ability to think for himself. The thinking process, in my opinion, is one the students should acquire in their learning reading skills. The only thought process I encountered from students was about the total program offered by many teachers on the same subject--reading. The idea behind it all was to acquaint them to not only read with greater interest and to build their vocabulary, but also to understand the subject matter I teach. Mathematics, with a goal towards the reading material presented, such as words related to the subject of math, phrases, symbols, or graphing material. I have found that motivation is a primary lacking thing in students. Most accepted each assignment; however, they implied overtures that indicated that each lesson was a genuine chore. Most completed the assignment with very little thought given to doing the assignment. Any inducement I offered, and there were many, was like offering pie in the sky and I had the feeling that they wanted immediate satisfaction for their need rather than looking forward to some day requiring their improvement now to be used later in life. The mental training this course offered is useful; however, it is a very difficult proposition to inculcate in young minds how useful it really is. And this is not motivation.

A second item related to the math program regarding reading skill is that in the math area it presented some serious obstacles. Among the obstacles, one of which is the use of the textbook offered. It is a concensus of opinion that the math textbooks are authored in such a way as to offer no easy understanding, as it is a difficult assignment for students to read and interpret, moreover to gain any challenge to improve their reading skill from reading drab, monotonous, uninteresting sentences such as the subject of math is disciplined to do, and it is evident that students do not react positively to improve reading skills from compelling them to read from this type of textbook. Each author may well have intended accuracy, but to most students of the age level I teach, their reading them are insufferably dull. I must quote what someone had said about math textbooks, that "Many authors profited as little from their study of English as their students profit from the study of mathematics. Dangling participles are a dime a dozen. Long, awkward, graceless sentences are the rule. Cliches are common. For example, 'It might be well at this point to discuss . . . ' Why? The phrase avoids

thinking through a valid reason for introducing the new idea." Much can be said concerning the vocabulary. The words are somewhat new to most, even though many have been exposed to words of the same content and meaning in previous years. There has been countless times in various classes where a student cannot pronounce the words used in math textbooks, even though I have gone over it a number of repetitous drill-like times.

The only other analysis I should like to examine is the technique the workshop offered. I can only say for my part--great! But the preparation time was tedious and thought-provoking for the teacher. The implementation to the students was an easy task. I was one who suggested a compilation of all material brought into the workshop be reproduced for use by each teacher for the ensuing year. It should be bound either in book or pamphlet form in order that it can be readily used. If a teacher must resort to such long, thought-out preparation time, I feel confident any help to a student will fall short because the time spent in gathering and printing the material to offer is indeed time consuming.

Another suggestion is that all the guidelines, GRP's for mapping and outline, divided page, or whatever resemblance a paper was introduced in the workshop also be printed so direct copies can be transferred to a verifax copier in order that as many copies can be reproduced by a teacher as needed. And these papers also be separated according to the proper subject content pertinent to each teacher's assignment of teaching. Owing to the lack of decent material in the math subject field, I found myself writing out lengthy assignments offered by workshop techniques in order to implement. Some of the material I had to re-write from textbook daily assignment for the student, and further its implication to adapt to the reading purpose, and this proved interesting to me, but again, a chore to the student.

The workshop techniques were given with the advice not to use on students more than twice weekly, and I hope I don't sound negative to this opinion now being stated: It is difficult to implement one technique, let alone to attempt two in the same week. I have accomplished to provide two techniques in one week's time, and it is a difficult task, particularly, not to be reiterative, but in math it is difficult.

I, as a teacher, did learn considerable regarding reading skills. I found much of the material interesting. I can also state that I was not fully aware of the need of this type of program until witnessing the vast scores of students who are in need of help in their reading. It brought me to the awareness of a good majority of my students not being able to read competently at their present age levels.

I wish to suggest that program of such workshops be conducted more nearly to an opening of a school year, rather than held towards the end of the school year, enabling a teacher to be more aroused to implementation of the program rather than have that enthusiasm diminish or lessen in the interim of a summer vacation.

OVERALL EVALUATION

Below I have chosen several topics that have helped me the most. I will attempt to tell why they have helped me and how I will use them in the future in my teaching.

1. DETERMINING FACT FROM OPINION

Many times in a math problem, certain figures are thrown in that do not necessarily have to be used to solve the problem. More times than not, students will be apt to use those numbers in solving the problems. Session numbers 1 and 2 helped me develop exercises that will assist me in teaching these types of problems. For example, the article on heart attacks in lesson 2 I will use again because of its usefulness in this area.

2. SSSD FORMULA

The next session we received the very important SSSD formula. Here again, I used the information given to us to teach story problems. Along with the SSSD, we received a story word chart for students to fill out when solving story problems. This is the easiest way I have found to teach story problems. The chart and problems that I used are contained in my weekly journal.

3. GREEK AND LATIN ROOTS AND AFFIXES

Sometimes math words contain very little meaning for students. After receiving instruction on Greek and Latin roots, prefixes, and suffixes, I found new meaning in the words I taught and also a new method of conveying the meaning of the words to students.

The above three parts are the ones I consider most useful. As anyone can tell by reading this journal, I was after better methods to teach story problems and this I received.

I would like to make one more comment. When teachers who are teaching junior high teach other teachers who are also teaching junior high students, it is really good. We talk on each other's level and we all understand the students. We realize what must be done to be successful in the classroom. It was a great class!

OVERALL EVALUATION

The workshop has been one of the most interesting and informative classes dealing with education that I have taken. This class was professionally presented. The information was helpful and very useful. It could be applied to mathematics with very little disruption of everyday activities.

I had very few problems with students rebelling against doing the activities. As I have mentioned earlier, it was a change of pace for them and they enjoyed it.

I would like to see this program carried further. Because of the present education class requirements at the universities in Utah, teachers are, as a rule, unprepared to teach reading. I know this is the case with me. This course has made me aware of my limitations in the reading area. I would like to continue and establish a broader foundation in this field so that I could better incorporate reading into my math program.

The feature of this program I liked best and think was most effective was working out assignments similar to the ones we made for the students. This gave me direction and some insight into what the students would encounter when they worked out our assignments we made for them.

OVERALL EVALUATION

When I first started in the program I wondered what I could learn that could be useful in teaching reading in math. I discovered there was quite a bit. When I attempted to fill in the sheets given to us to evaluate or rate our ability to teach the reading skills, there were some statements that I really didn't know what they were talking about. I know what they are talking about now.

I have learned some new skills and some new techniques in doing several things that should make not only my math teaching better but incorporate even more reading skills in with the math.

The workshops always had something new to me and were given in such a way that I could make some application to my personal abilities and also some application in math teaching.

At first I thought the feedback from the other participants in the class was not worth the time it was taking. I soon discovered that the ways the teachers applied the techniques and skills were as useful to me as the new material of the workshop was.

As I have commented in another area in these evaluations, a class such as this would be much more useful and perhaps more meaningful if it were given at the first of a school year when there are not so many pressures of covering certain areas in a particular class. Perhaps spread out a little more would be good. It was very difficult to make application in the week's time that was available between workshop sessions; however, some of us procrastinate and may not do better with more time. I would suggest that a course such as this not be offered unless there are students available in order to make application. This is how I learned more what it was about--trying to make the application in the classroom.

I'm sure that I learned a lot and I hope I can continue to make application of it in the future. I feel that the material that has been developed in connection with this project will be helpful to those involved in the future, but personal materials developed for personal presentation are the most useful. We all have different techniques and abilities in our presentations and what works for one does not work for all.

I think this has been a useful project. These <u>opinions</u> I am expressing are based upon <u>facts</u> that I have observed throughout this project. I'm glad that I was involved in the project and hope I have contributed something to it.

OVERALL EVALUATION

Student performance:

I think that these workshops have had a tremendous impact on the students of our school. One thing is certain: Many of them know that we have been in workshops to improve our teaching. That alone is very significant. Then, too, these students have really been helped in many ways in improving their reading skills.

Workshop evaluation:

This has been one of the most practical courses that I have taken. So often I have been in courses with such beautiful theories that I came away enthralled at how nice they looked, then that's where I left them. Frankly, I was rather pessimistic at first regarding the practicality of the offering but I really have been impressed by the practical nature of the work we have accomplished. I also am impressed with the practical reward we expect to receive.

Personal growth:

I am sure that I have experienced significant personal growth as a result of my participation in this workshop. Especially important, I think, is the probability that these suggestions and the resultant personal growth are not just a "one shot and then forget it" sort of thing, but they can and probably will result in long-range growth and development.

I believe that the following areas are particularly useful to me: critical and interpretive reading skills, reading, understand and following directions, training students to follow directions by avoiding needless repetition, word attack skills, vocabulary development (speaking, reading, writing), and study habits.

TEACHERS' OVERALL EVALUATIONS

Science Department

Lee Fry
Joseph M. Harris
Gerald L. Langton
Larry Larson
Harold Stucki

OVERALL EVALUATION

This workshop has been a valuable positive experience for me. The weekly lessons have been effective and relevant for myself and applicable to my classroom presentations.

I have learned a great deal about my own methods of teaching and have been able to evaluate them in terms of what we have been given in our workshop. It would be difficult to select out an area which was the most beneficial because they were all important and useful. However, I think I enjoyed the presentations on critical thinking, following directions, and word parts (prefixes, suffixes, and roots) the most.

The weekly exchange of information among teachers and evaluations that resulted were extremely helpful.

This workshop has helped me become more highly motivated to try new and different ways in attacking words and learning words in science.

From my observations of student activity while we were doing things from the workshop, it appeared they were motivated, interested, and challenged more than at other times. This is significant and I plan to incorporate many of these kinds of things into my plans for the future.

In conclusion, I was happy to have had the opportunity to participate and feel it was well worth the time put in. I think others would also appreciate the same experience. I really believe these types of workshops are more relevant to teacher recertification. We need to do more things in individual schools where the things done and learned can immediately be applied to the situation and students in the particular school.

I also believe that teachers who desire should be allowed to work during the summer to develop activities such as we have done. I hope someone who has some influence in this direction will read this.

OVERALL EVALUATION

I am truly convinced that this has been the very best workshop I have taken over the past 20 years. I strongly feel that it was the best because the enormous amount of ideas and materials that were presented to me could be practically applied to my science classes.

Of course, I feel that I have learned a great deal more than my students have learned as a result of taking this reading workshop.

I feel very fortunate to have been instructed and helped by two of the top reading "experts" in this part of the country. Their expertise in the way they presented the information to us was terrific.

I am sure that all of us taking the workshops would agree that they were very interesting and helpful to us, as well as indirectly helping the students a great deal, also. The first workshop was a bit confusing to most of us that had no reading background, but from then on things just seemed to fall into place from session to session.

I am most appreciative for the opportunity given me to improve myself, as well as to improve the reading ability of my students. I sincerely feel that my students have really improved in most, if not all, of the seven basic reading skills.

In conclusion, I am sure that there will be many changes in the way I teach my science classes in the years to come. I am really convinced that my classes will be much better next year as a result of this excellent workshop. My most sincere thanks to Karen and Mary for making this workshop so valuable to me.

OVERALL EVALUATION

I can say without question that this has been a very time-consuming workshop in terms of the amount of preparation time spent by me as a teacher. It has been a very interesting ten weeks and I have personally gained tremendously from it. We have had good instructors to guide us into making the kinds of activities that would help our students become better readers.

The sessions that stand out in my mind as being the most beneficial to me are the second, sixth, and seventh and eighth. The second was picking out facts and opinions and exaggerated statements, etc. from an article or advertisement. This was challenging to students and fun for me. The sixth session was on following directions. I was really surprised at how much trouble students have in following directions. I was pleased to find that in rewriting some directions the students were able to follow them better. I'm talking about rewriting an author's directions that were difficult to understand.

The seventh and eighth sessions on prefixes, suffixes, and root words will be the single most beneficial part of the entire ten weeks. I have really gained a lot from those sessions that will personally help me as a teacher to be able to help students understand word parts.

The sciences really have a lot of Greek affixes and roots and I'm grateful for the exposure to them that I have received in this workshop.

I repeat again that it has been hard work but a very beneficial workshop. My only recommendation would be that the workshop be lengthened to twenty weeks and you meet as a group once every two weeks instead of each week.

I know the students felt the impact of this workshop and the correlation of the teachers in trying to teach the same basic skills in the various subject areas.

OVERALL EVALUATION

I feel that the two instructors, Mrs. Smith and Mrs. Nielsen, did an outstanding job preparing and organizing and presenting reading materials. I will definitely use the ideas and materials used for the reading workshop in future years. I didn't really realize till now the carry-over of reading in science and the real value of teaching reading in the four basic school subjects till now. The insight I gained and will be able to use to teach future science students I will have will be invaluable. I have already decided to use various direction devices, root words in science of Latin and Greek affixes and prefixes, and a number of other reading techniques into my curriculum next school year.

I did see students grow in their reading skills even through the two months in which I was presenting them with reading materials. I presume that if I reinforced students with reading skills in science that they should develop some good skills.

I plan to implement these reading activities into science next year in unit materials. Skills in:

critical and interpretive reading
differentiating between fact and opinion
word identification skills
comprehension skills
vocabulary for each chapter done
reading study skills
root words in science

OVERALL EVALUATION

This workshop has been hard, interesting, fun, challenging, frustrating, educational, helpful, time consuming, stimulating, and I'm very happy that I could be involved in it. I have learned a great deal that will help me in making my science teaching more interesting and educational.

The instructors were great and well-prepared with many materials that had real practical application in my classroom. During the time that the workshop was going on I received much help from the instructors in problem areas while trying to apply the lesson from the workshop in my classroom. I cannot imagine trying to do all the things I tried in my classroom without the help of the class instructors--helping me as I ran into problems.

I feel that if all teachers had the opportunity to learn, apply, and see the results of the lesson application in their classrooms, they would want to have the knowledge this class or workshop provided. My one biggest concern is that I might slip back into some of my old ways of teaching and that I will forget how to use some of the great ideas this workshop brought out. Actually, I feel that I have just made a good beginning on some of these subjects and that I need some repeat, review, and more guidance in making lessons that I can use in my seventh grade science teaching.

TEACHERS' OVERALL EVALUATIONS

Social Studies Department

Ken Blair
John Gray
Marie Hanks
Lewis V. Ivie
Douglas Mather
Sharon Sheya
Jim Wilson

OVERALL EVALUATION

These sessions have helped me become more word conscious and, hopefully, a better teacher. Over the past ten years or so I have had a number of courses designed to do the type of thing which this course has done. The effects have been that for a short time after taking each course I have implemented some of the ideas taught in the course. Most graduate reading classes offered today seem to be aimed at helping one become certified as a remedial reading teacher or reading specialist. The drawbacks to these courses is that many of them are <u>too</u> specialized and offer little to the teacher in the regular classroom.

By contrast, this course seems to have been designed with the classroom teacher specifically in mind, recognizing that the average teacher is not a reading specialist, but that with a little help and direction the teacher can acquire the skills needed to place greater emphasis on reading and word skills as they apply to the particular content area. In this respect, this class has been very beneficial.

There have been a number of drawbacks in the course which can probably be corrected another time. First, the course was conducted over too short a period of time. Lessons should be spaced every other week, or longer, rather than weekly. Second, the course was held too close to the end of the school year to be as effective as it might have been if taught earlier. Third, by having three departments involved, the students were saturated with the same general procedures being carried out all at once in different classes. Perhaps a cooperative setup could be arranged for another time so that a student does not get exposed to GRP or some other teaching technique two or three times in the same week--or day. Fourth, perhaps another time an inter-disciplinary group could be considered rather than having two groups taught on two separate nights. One advantage of this would be that teachers in the different departments would have a better idea when those in another department were going to use such and such a procedure. This would be better for both the teachers and the students. All in all, the class was very worthwhile, and the shared ideas and materials with other teachers, plus the things learned in class were of such a nature that I believe the teachers taking the class will be permanently influenced to emphasize at least some of the work skills learned.

OVERALL EVALUATION

Although I have written an evaluation of each of the ten sessions of the workshop, there are a few things I would like to write concerning the course as a whole.

After the first two lessons I was feeling a little lost and wondering how such a large job could be completed in just ten weeks. This was due mostly to misunderstanding on my part. The purpose did become clear to me. Specific content area teachers should be able to build on already existing reading skills, using their content material.

Too many times, I feel, an instructor assumes a student has a necessary reading skill and gears his instruction accordingly. This could very easily build failure into a student. A few simple surveys, and then some knowledge on how to use available content to develop skills could greatly benefit the education of potential failing students. Also, it can do nothing but help average and advanced students as well.

I have learned much from the workshop, and the ideas presented there were beneficial. The last four or five lessons especially have been helpful. The last half of each session was presented quickly and completely with very little interruption, and this was important since it helped to drive the objective home and keep it there.

OVERALL EVALUATION

One of the greatest strengths of this workshop has been the fact that materials have been developed with a specific group of students in mind and the material has been applied and adapted to them. Enough information and background material was given in the class sessions so that we could reasonably apply the concept and become aware of possibilities for building thereon and incorporating them into the regular curriculum and methods of content teaching.

Another good feature of the class was to give added meaning and reasons to things we are already doing. It broadened the scope and made us aware of additional value in skills to be taught within regular assignments, thereby improving our teaching skills.

The materials presented to us were thorough and abundant. At times it was not crystal clear what we were to do with them, but as we worked and developed lessons it became more clear. Judging from the performance of junior high students I have had over the years, I feel some of the skills already expected of seventh and ninth graders were unrealistic. Most of the students have very limited skill in these areas and need as much work beginning them and improving them.

The workshop was excellent in bringing together teachers of a department to share teaching methods and skills and developing them together. As we all realize, a project to teach the skills we were concerned with should be started at the beginning of the school year and used throughout to achieve lasting results.

OVERALL EVALUATION

I was not impressed with some of the early lessons or assignments. I failed to see the relevancy in them (3). Since that time I have gained a lot of information that I feel will be helpful for me in planning my curriculum and approach to the material that I am assigned to teach. I have used those ideas that I feel can help me in my program and have seen success in their use. I have also been able to evaluate my methods and goals and feel that some of the ideas and materials from the other teachers can and will be used in my teaching next year.

I will have a remedial U.S. history class next year and have already gained ideas as to ways of approaching these students. I also plan on using a specific vocabulary list for each chapter of social studies next year.

I think it would be wise and important that we get together in groups next year on regular occasions and try to tie our programs together more than we have in the past. I think we can all gain from the experiences and successes of other teachers in all the fields. It would also be important to continue on a rather regular basis in a classroom setting to receive more ideas of ways we can help students to improve their school skills. I think we have only begun to touch the surface with ideas and ways that we can help students in our assigned teaching areas.

Enjoyed the course and received many stimulating and helpful ideas from instructors and other teachers. Felt this workshop was far superior to what was given last year on a one-shot Saturday.

OVERALL EVALUATION

I have to be truthful and explain that when this course was first initiated I had a very pessimistic attitude about its outcome. I thought we were spending more money on another reading program when clearly the real problem was class size. After completing the course, I have to somewhat revise my attitude. Class size is still very much a major problem and it appears that it will be for some time, but I have concluded that this course does have a great deal of practical material to offer. It has affected my techniques of teaching and will continue to do so in future years.

Before taking this course I was convinced that teaching a student to read was the reading teacher's responsibility, and my job was to teach geography. I was acutely aware that I had many problem readers in my geography classes, and for that reason had encouraged only moderate reading in the textbook. This problem still exists in my classroom, but because of this course at least part of my future program can now be gauged to help meet the needs of these students. I fully endorse this course and feel that it would be helpful for teachers of all academic subjects which require reading.

OVERALL EVALUATION

The class, I feel, has not only been worth the two hours a week spent in session, but all the outside time spent in preparation. It was unlike any other "reading in the content areas" class I've taken in that it was more adaptable in the different approaches presented.

The only change I would recommend is the time. The sessions were long enough, but the weekly meetings didn't really give enough time to use the ideas that were introduced. One week isn't enough. The lessons should be developed and expanded through an entire year's curriculum instead of in five-day stints.

I also feel the class should be a continuous presentation throughout the year. This would give the teachers more time to utilize the information given them in the class meetings.

I feel the class was interesting and worth attending. I'm going to have to spend some time realizing all the information that was given to me before I'll feel competent in utilizing it.

The class was stimulating and thought provoking. It was also fun to get together with my fellow teachers and hear their ideas. We're really quite a brilliant faculty when we use each other as potential resources. I wish it'd happen more often!

OVERALL EVALUATION

When I first started to take this class I thought it would be just like any other class that I have taken, for example, it would be just something to do and would be of little interest. But I thought that our instructors were great in putting the information and then helping us in doing the assignments. They were both great; they both showed a good attitude in teaching the class, which I feel really had a great effect on the whole class.

I feel that this class helped me a great deal because I got to see and hear other teachers and ways which they did their classroom projects of presenting material to the students. I feel that this was one of the most successful parts of this class.

I feel that I have learned a great deal from this class. One of the things that I feel that really helped me is vocabulary. What I mean is how to put across to students different ways to teach them words which they need to know without just writing them on the board and telling them to learn the meaning and spell the word correctly.

I feel that this class and the different material will help not only myself and the other teachers who have taken this class, but the material that we all have put together will help others in different ways depending on the teacher. This class would be a very good help. I think that if all teachers were to have this kind of class.

Librarian
Karna Petuskey

OVERALL EVALUATION

Student performance:

I have listed with each exercise the responses from students and feedback I received in presenting them to the students. I think all students have benefited from the overall effort in the three disciplines. I see a real need to continue to work together with common goals and in cooperation to re-inforce each other in any way we can to meet all students' needs in education.

Workshop evaluation:

By having teachers experience some of the activities we were assigned to present to students they were given an insight into how students might approach a problem. I think this approach has been most effective. It gave us an example of good teaching principles along with experience, to a certain extent, the problems our students experience.

Many of the class members seldom came to the media center before we started the workshop. Some began to congregate in the faculty library to discuss assignments and cooperatively plan work with classes. Many came for resource help from materials in the library or to see what we might have that would be useful. I was able to help some, and they were able to help me.

The TV cassette program has really been a success with social studies and science teachers. They have found the value of having the films to use when and how they wanted to use them.

Personal growth:

I have really appreciated the opportunity of the interaction with other faculty members. I have become better acquainted with many of them and have been able to discuss how I could help them with materials and ideas in their classes. I consider that to be what my job is all about. The goals I have for the media center are closer to being met because of the workshop, to a large degree. My personal growth is closely tied to the interaction of class members. I became much more aware of problems students face in reading and also did some searching for answers I didn't even know the questions for before the workshop.

WORKSHOP PRESENTATION OUTLINE

SESSION 1

Section a: Science and Mathematics
Section b: Social studies

1. Project Director reviewed committment to program

2. Pre-test for teachers

3. Dyslexia-deficient-different student and self-concept: oral presentation

4. Critical reading: briefly state
   Oral discussion on need and purpose of critical reading and identify skills

5. Introduce the activity: Death by Transfer

6. Skill identification: apply skills to activity and arrive at a concensus of which skills were used

7. Give assignment; review committment

Teacher pre-test given at first of workshop covering all skills which would be taught during the next ten weeks

PERSONAL EVALUATION

On the continuum of one to five assess your competency in teaching the following reading skills. One (1) represents high level of competency.

CRITICAL AND INTERPRETIVE READING SKILLS

Grade 7

1.	Differentiating fact from opinion	1 2 3 4 5
2.	Judging reliability of an author's statement	1 2 3 4 5
3.	Judging the relevancy and adequacy of context	1 2 3 4 5
4.	Recognizing overstatements or unfounded claims	1 2 3 4 5
5.	Drawing conclusions and inferences	1 2 3 4 5
6.	Anticipating events	1 2 3 4 5
7.	Relating what is read to past experience and self	1 2 3 4 5

Grade 9

1.	Evaluating content in terms of purpose	1 2 3 4 5
2.	Recognizing the author's purpose	1 2 3 4 5
3.	Evaluating the author's purpose	1 2 3 4 5
4.	Judging reliability of information	1 2 3 4 5
5.	Differentiating between fact and opinion	1 2 3 4 5
6.	Detecting propaganda	1 2 3 4 5
7.	Identifying unsupported generalizations and recognizing exaggerations	1 2 3 4 5
8.	Anticipating forthcoming events	1 2 3 4 5
9.	Reading conclusion and making inferences	1 2 3 4 5
10.	Applying implications to real life	1 2 3 4 5

WORD IDENTIFICATION SKILLS

Grade 7

1.	Using generalizations governing sounds in attacking new words	1 2 3 4 5
2.	Attacking words with common variations in pronunciation	1 2 3 4 5
3.	Identifying and using inflectional endings	1 2 3 4 5
4.	Identifying and using derived forms of words	1 2 3 4 5
5.	Identifying and using common prefixes and suffixes	1 2 3 4 5
6.	Using syllabication and accent in identifying words	1 2 3 4 5
7.	Identifying and using compound words	1 2 3 4 5

Grade 9

1.	Using generalizations and common variations governing sounds in attacking new words	1 2 3 4 5
2.	Recognizing familiar elements in derived forms	1 2 3 4 5
3.	Using syllabication and accent in identifying new words	1 2 3 4 5
4.	Identifying and comprehending compound words	1 2 3 4 5

VOCABULARY

Grade 7

1.	Using picture and context clues to word meaning	1 2 3 4 5
2.	Incorporating precise terms into their total vocabulary	1 2 3 4 5
3.	Understanding word denotation and connotation	1 2 3 4 5
4.	Using the dictionary for word meanings	1 2 3 4 5
5.	Understanding new words through known parts	1 2 3 4 5
6.	Understanding synonyms	1 2 3 4 5

VOCABULARY (continued)

Grade 9

1.	Context clues	1 2 3 4 5
2.	Understanding words through separation into root and affixes	1 2 3 4 5
3.	Understanding word connotation and denotation	1 2 3 4 5
4.	Incorporating precise and technical language into their total vocabulary	1 2 3 4 5
5.	Understanding the use of synonyms and antonyms	1 2 3 4 5
6.	Application of dictionary skills	1 2 3 4 5

COMPREHENSION SKILLS

Grade 7

1.	Identifying the main idea	1 2 3 4 5
2.	Reading for detail	1 2 3 4 5
3.	Reading for sequential order	1 2 3 4 5
4.	Reading for cause and effect relationship	1 2 3 4 5
5.	Understanding the effect of punctuation on meaning	1 2 3 4 5

Grade 9

1.	Unraveling complicated sentences	1 2 3 4 5
2.	Locating topic sentences	1 2 3 4 5
3.	Identifying inferred main ideas	1 2 3 4 5
4.	Isolating details	1 2 3 4 5
5.	Recognizing sequential order	1 2 3 4 5
6.	Recognizing relationship between cause and effect	1 2 3 4 5
7.	Using punctuation as an aid to comprehension	1 2 3 4 5

READING STUDY SKILLS

Grade 7

1.	Differentiating reading purposes	1 2 3 4 5
2.	Following written directions	1 2 3 4 5
3.	Using parts of a book	1 2 3 4 5
4.	Skimming for information	1 2 3 4 5
5.	Making a written summary	1 2 3 4 5
6.	Taking notes	1 2 3 4 5
7.	Organizing information from several sources	1 2 3 4 5
8.	Using outlining as a study technique	1 2 3 4 5
9.	Reading graphic material	1 2 3 4 5
10.	Using guide words in the dictionary	1 2 3 4 5

Grade 9

1.	Establishing purposes for reading	1 2 3 4 5
2.	Following written directions	1 2 3 4 5
3.	Understanding and using organizational patterns	1 2 3 4 5
4.	Skimming material for specific information and to answer questions	1 2 3 4 5
5.	Summarizing ideas	1 2 3 4 5
6.	Using note-taking techniques	1 2 3 4 5
7.	Organizing material through outlining	1 2 3 4 5
8.	Reading graphic material	1 2 3 4 5
9.	Using the dictionary effectively	1 2 3 4 5

Please make an overall comment about your feelings on your ability to deal with these five skill areas in reading.

TEACHER'S ATTITUDE GUIDE

A B C 1. My students are very creative. They don't need to read the texts.

A B C 2. Students won't develop insight into this concept unless I tell it to them.

A B C 3. Why worry about this class? No one scores below the 94th percentile on the standardized test we use in this district.

A B C 4. Related to the reading act, one reasons before, during, and after.

A B C 5. Unless students already possess ideas, they can't create new ones.

A B C 6. "Psyching out" the teacher to insure an "A" may produce critical reasoning but is rarely creative.

A B C 7. One cannot make something from nothing.

A B C 8. Functional exercise of creative reasoning requires a conducive environment.

A B C 9. Squelched students and insecure teachers are highly correlated.

A B C 10. Students should be given the right to be wrong.

From Harold Herber's Teaching Reading in the Content Areas

SUGGESTIONS FOR IMPROVING SELF-CONCEPT

There are many things that teachers can do in helping culturally different children to build strong self-concepts, and in so doing he or she will be helping them to undertake and carry through learning tasks in reading with greater success. Here are a few suggestions:

1. Accept each person as a unique individual of worth in himself and help him to strive toward the goal of developing himself into a worthy human being.

2. Encourage him to talk about himself: how he feels, what he is worried about, what his interests are. If he is having trouble with reading, let him tell what he thinks about not being able to read, what he thinks may be the cause of his trouble with reading, what he thinks should be done about it.

3. Praise each small achievement that he makes.

4. Provide opportunities for success. For example, if the student is having difficulty with reading, find opportunities for him to experience success in activities in which he can do well such as drawing, dramatizing, etc.

5. Give him responsibilities that he is capable of carrying out and trust him to discharge them.

6. In discussion with him, you and he together may set up short-time goals for him to reach. As time passes, longer-time goals may gradually be set up as a result of your mutual discussion.

7. Study and evaluate his growth in terms of his own characteristics and potential rather than in terms of an entire class.

8. Don't label him by placing him permanently in the lowest achieving group of the class. Use flexible organization.

9. Supply reading books and supplemental materials in which pictures and content materials deal with different cultural and economic groups.

10. Present TV and radio programs featuring life in a variety of homes, places, occupations.

NOTES

Pre-test: Evaluation of skills

Some anxiety over continuum numbering of 1 (high) to 5 (low). Instructions: left (high), right (low)

Observations during pre-test:

Evidence of uneasiness among teachers during evaluation. Suggestion: Include statement of past reading instruction of teachers

Very positive attitude toward information given of different, deficient, and dyslexic student

Critical reading skills introduced and defined

Defensive body positions apparent during activity

Definition:

The search for relevant materials, the evaluation of data, the identification and comparison of sources, and the synthesis of findings. It involves a background of knowledge to make a sound judgment.

--deBoer

After discussion of the following critical thinking skills the group read the story aloud.

Moved into small groups to complete assignment in the role each was given by the instructors.

CRITICAL AND INTERPRETIVE READING SKILLS

Upon entering Grade 7 most pupils should have attained facility in the following critical and interpretive reading skills:

1. Differentiating fact from opinion
2. Judging reliability of an author's statement
3. Judging the relevancy and adequacy of context
4. Recognizing overstatements or unfounded claims
5. Drawing conclusions and inferences
6. Anticipating events
7. Relating what is read to past experience and self

DEATH BY TRANSFER

Picture yourselves living in the small eastern town of Lasser some time in the 1970's. The town has a population of about 20,000. Of the roughly 9,000 working adults, nearly one-half are employed by the Lasser Tool Company.

Lasser is a typical one-company town. For the past 50 years the entire economy of the community has depended on this small, family-owned business. Just about everyone in the town works for the firm or is related to someone who does; the other businesses (stores, restaurants, etc.) are also dependent on the company's operation. This mutual dependence was revealed during the depression when employees willingly took a cut in pay for a few years rather than see the plant close its doors and the town merchants helped out by extending liberal credit.

The company, and the town, became prosperous and remained so through the 1960's. The major plant operation was an assembly line; there was also a small research and design department employing about 50 engineers and technicians.

But the economy has changed in the past 25 years. All over the nation huge corporations have begun to operate on a global scale, carrying on business in dozens of different countries. Lasser Tool Company has found it increasingly difficult to compete.

Now, suddenly, the management of the firm has announced that the assembly plant will be closed. This function will be transferred to Taiwan, partly to be closer to new markets, but primarily to take advantage of lower labor costs. The president has made it clear that this move is the only way the company can avoid bankruptcy. The research and design division will continue in Lasser.

The effect on the town has been devastating. Real estate values immediately dropped sharply. Many small business owners sold out and moved away. About one-third of the laid-off employees also left the town. But things are tight everywhere; jobs are generally scarce, especially for the young and those past 40. Most of the townspeople remain almost paralyzed, apparently unable to decide what to do.

Consider what you would do if you were the person on the card you have been given.

Issue	Facts	Decision A	Feedback	Decision B	Feedback	Final Conclusion
1.A. Is there a possibility that this corporation may not be permanent in Taiwan? 1.B. What kinds of problems or rewards could one expect by such a move? Would it be worth it? 1.C. Would it be better to move elsewhere and hope you can find other employment?						
2.A. Should you, because of loyalty to the town and your fellow employees, protest the decision and risk losing your job? 2.B. Should you quit?						

Issue	Facts	Decision A	Feedback	Decision B	Feedback	Final Conclusion
3.A. Should you sell your business and re-establish and re-build elsewhere? 3.B. What steps can you take to survive?						
4.A. Should you stay and hope new industry will come to town, knowing it will take at least two years for the economy to recover? 4.B. What steps can you take to survive? 4.C. After my decision is made, what am I going to do?						
5.A. Should you appeal to your union, company, or government? 5.B. What can you and your fellow employees do, bow to what has happened and move elsewhere and seek employment? 5.C. Unite and work with the city to attract new industry?						

SKILL IDENTIFICATION

Using the story "Death by Transfer" and the seven basic critical and interpretive reading skills, identify which skills were used in the process of arriving at your role-playing conclusions, and give an example of how you used each one.

ASSIGNMENT

The following questions on page 100 are offered as examples of ways to extend and adapt the ideas in the story.

For the next meeting, using today's presentation as a base, prepare an activity appropriate for your classes.

Outline of steps to follow in compiling personal journal is found on page 101.

DIRECTIONS: Choose two of the following questions and answer them by using the information found in the story "Death by Transfer."

1. Do you think the scenario and your solution to it are realistic in terms of the American economy? Why or why not?

2. All the above roles reflect American positions. What position might a foreign worker or government take?

3. What do you see as some of the implications of such dislocations on decision-making and planning for the individual, community, nation, world?

4. Should American businesses be discouraged or prevented from moving abroad? What would be the impact on business if forced to stay?

5. Suppose the United States government forbade this movement, what impact might this have on free trade, on international relations? What other alternatives could the government use to ease disruptions caused by massive layoffs?

INDIVIDUAL JOURNAL

The individual participant's weekly journal must contain?

1. A reproduction of the activities prepared by the teacher for his class using the reading skills as objectives.

2. An evaluation of student performance in the reading skills presented.

3. An evaluation of the weekly workshop presentation in terms of practical classroom application.

4. An evaluation of personal growth.

EXAMPLES OF TEACHERS' COMPLETED
CLASSROOM ASSIGNMENTS

The entire Science Department developed this sheet to accompany the Science Fair which was in progress. Name _____ 104

SCIENCE PROJECT EVALUATION

Directions:

1. Look at several projects in different science classrooms.
2. Select one of the projects that interests you and fill out this evaluation form.
3. Choose one other person to work with; however, each person is to fill out a separate evaluation form.

Science Project Title or Problem: _____

1. List those things you consider fact and those things you consider opinion about the project.
   A. Facts: _____

   B. Opinions: _____

2. How could you determine the information presented by the student is accurate (right)?

3. Does the evidence or information presented support the problem being solved?

4. Does the student make statements that have not been proven? Yes or No. Give an example. _____

5. Based on presented information why do you agree or disagree with the final conclusion about the problem? _____

6. What new problems does this project suggest to you?

7. How could the ideas learned from this project help you?

8. This science project evaluation paper has been very effective in helping me to think carefully about what has been done in this project. Circle the word which best fits your feelings about this evaluation paper.

Strongly agree Agree Neutral Disagree Strongly disagree

CLASS PROJECT INVOLVING CRITICAL READING SKILLS

Major objective:

1. To give the class an opportunity to study the seven critical reading skills
2. To provide them with an opportunity to do some creative thinking involving convergent and divergent thinking
3. To encourage students to look for relevancy in these skills to life and education in general and mathematics in particular

Specific objectives and procedures:

I. Hand out copy of Critical and Interpretive Reading Skills

II. Discuss briefly for meaning and relevancy

III. Hand out copy of Death by Transfer

IV. Divide class into four groups and assign each group one of four roles to play

V. Establish climate so that role playing will be as sincere as possible

VI. Hand out worksheet to each student and ditto master to each group

DEATH BY TRANSFER

Picture yourselves living in the small Utah town of Lasser some time in the 1970's. The town has a population of about 20,000. Of the roughly 9,000 working adults, nearly one-half are employed by the Lasser Tool Company.

Lasser is a typical one-company town. For the past 50 years the entire economy of the community has depended on this small, family-owned business. Just about everyone in the town works for the firm or is related to someone who does; the other businesses (stores, restaurants, etc.) are also dependent on the company's operation. This mutual dependence was revealed during the 1930's when employees willingly took a cut in pay for a few years rather than see the plant close its doors. The town merchants helped out by extending liberal credit.

The company, and the town, became prosperous and remained so through the 1960's. The major plant operation was an assembly line; there was also a small research and design department employing about 50 engineers and technicians.

But the economy has changed in the past ten years. All over the nation huge corporations have begun to operate on a global scale, carrying on business in dozens of different countries. Lasser Tool Company has found it increasingly difficult to compete.

Now, suddenly, the management of the firm has announced that the assembly plant will be closed. This function will be transferred to Taiwan, partly to be closer to new markets, but primarily to take advantage of lower labor costs. The president has made it clear that this move is the only way the company can avoid bankruptcy. The research and design division will continue in Lasser.

The effect on the town has been devastating. Real estate values immediately dropped sharply. Many small business owners sold out and moved away. About one-third of the laid-off employees also left the town. But things are tight everywhere; jobs are generally scarce, especially for the young and those past 40. Most of the townspeople remain almost paralyzed, apparently unable to decide what to do.

1. How many people work for the tool company?

2. How are the stores and restaurants dependent on the tool company?

3. Why is it so difficult for the tool company to compete in Lasser?

4. Why is the assembly plant being moved to Taiwan?

5. Why are the small business owners leaving Lasser?

CRITICAL AND INTERPRETIVE READING SKILLS

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4. Recognizing overstatements or unfounded claims
5. Drawing conclusions and inferences
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Now suddenly the management of the firm has announced that the assembly plant will be closed. This function will be transferred to Taiwan, partly to be closer to new markets, but primarily to take advantage of lower labor costs. The president has made it clear that this move is the only way the company can avoid bankruptcy. The research and design division will continue in Lasser.

The effect on the town has been devastating. Real estate values immediately dropped sharply. Many small business owners have sold out and moved away. About one-third of the laid-off employees have left the town also. But things are tight everywhere; jobs are generally scarce, especially for the young and those past 40. Most of the townspeople remain almost paralyzed, apparently unable to decide what to do.

#1 Your role: A fairly recent member of the firm's administrative staff

You have been in this position since you were graduated from college three years ago. You enjoy the work and it pays well. But now you have been told that you will have to move to Taiwan for an indefinite period. You are now married and expecting a child.

#2 Your role: A design engineer

The town is dying, but your job seems safe. Life in Lasser won't be the same, and you sympathize with those whose well-being and security have depended on the company.

#3 Your role: A store owner

In your mid-fifties, you have devoted yourself to making a success of your small hardware business. Closing the plant will cut your volume by at least fifty percent or more if people keep moving away.

#4 Your role: A young business person who started an insurance agency in Lasser two years ago

You were just getting on your feet financially when this happened.

#5 Your role: One of the employees to be laid off

INSTRUCTIONS FOR DITTO WORKSHEET

1. Think carefully about all of the different features and aspects of the situation as you put yourself in the place of the person you are selected to be. Use your imagination. Seriously pretend that you are this person. Use your ideas as well as the ideas of the other members of your group. Please follow all of the directions.

2. Select a "quarterback" or leader of your group. The leader's responsibility will be to call the plays and to keep everyone working together.

3. The group leader will choose a recorder.

4. The recorder will write your ideas on the ditto master that has been prepared for you. You will each be given a copy of the results.

5. Please record as many ideas as you can about the following questions or problems:

   A. What problems will you and your family be facing now?
   What decisions will you have to make?
   Record your ideas now. Do not try to write answers now. Just see how many problem questions you can write.

   B. Will math be needed or be involved in arriving at or getting the best answers to your question in Section A?
   As you think about the way math might be involved you may want to add some more questions to your list.

   C. You will hear and read a great deal in your town about this disaster. Please list places or sources where you might get information about any of the problems you are concerned about.
   AFTER you have listed as many sources of information as you can think of, refer to the list of seven reading skills that you have received. Opposite each source write, in the space provided, the number which names each skill that will be needed to properly use that source of information.

   D. Now CONSIDER all of the math you have ever studied. Did you need any of the seven critical and interpretive reading skills to handle any of this math? Answer this question in the following manner: Opposite each reading skill listed on your worksheet list any examples in math that you can think of where this skill was needed or used.

DITTO WORKSHEET

Section C

Group No. _____

Sources of Information	Skills Needed

DITTO WORKSHEET

Sections A and B

Group No. _____

Questions or problems we encounter as we pretend to be _____.

A	B	
	Math Needed	
Question or Problem	Yes	No

STORY PROBLEMS

1. How many calories are there in a meal of one lamb chop (100 calories); a baked potato (100), with butter (100); peas (75), lettuce (9), with Russian dressing (75), and a chocolate eclair (250)? _____

2. A dairy farmer has 17 cows which produced 127,500 pounds of milk during one year. What was the average number of pounds of milk per cow?

3. If a speedboat which can travel at a rate of 32 knots travels 13 knots faster than a cruiser, what is the rate of the cruiser?

4. Mrs. Eldridge works in a dress store. In one day she sold two dresses at $45; four dresses at $25, and eight dresses at $17. What were her total sales for that day?

5. Which has a greater seating capacity and how much greater:

   An auditorium which has 35 rows of 14 seats each and 70 rows of 7 seats each, or

   An auditorium which has 26 rows of 16 seats each and 52 rows of 8 seats each?

6. There were five persons in an arithmetic class who received "A" on their report cards. This was one-sixth of the class. How many pupils were there in the class?

7. What is Mr. Wart's annual income if he earns $415 a month?

What facts are given?	What am I to find here?	What processes should I use?	What would be a reasonable answer?	Carry out plan	Check each step
1.					
2.					
3.					
4.					
5.					
6.					
7.					

Problem: Water and power shortage

DAM AND POWER PLANT PROPOSAL--MILL HOLLOW AREA

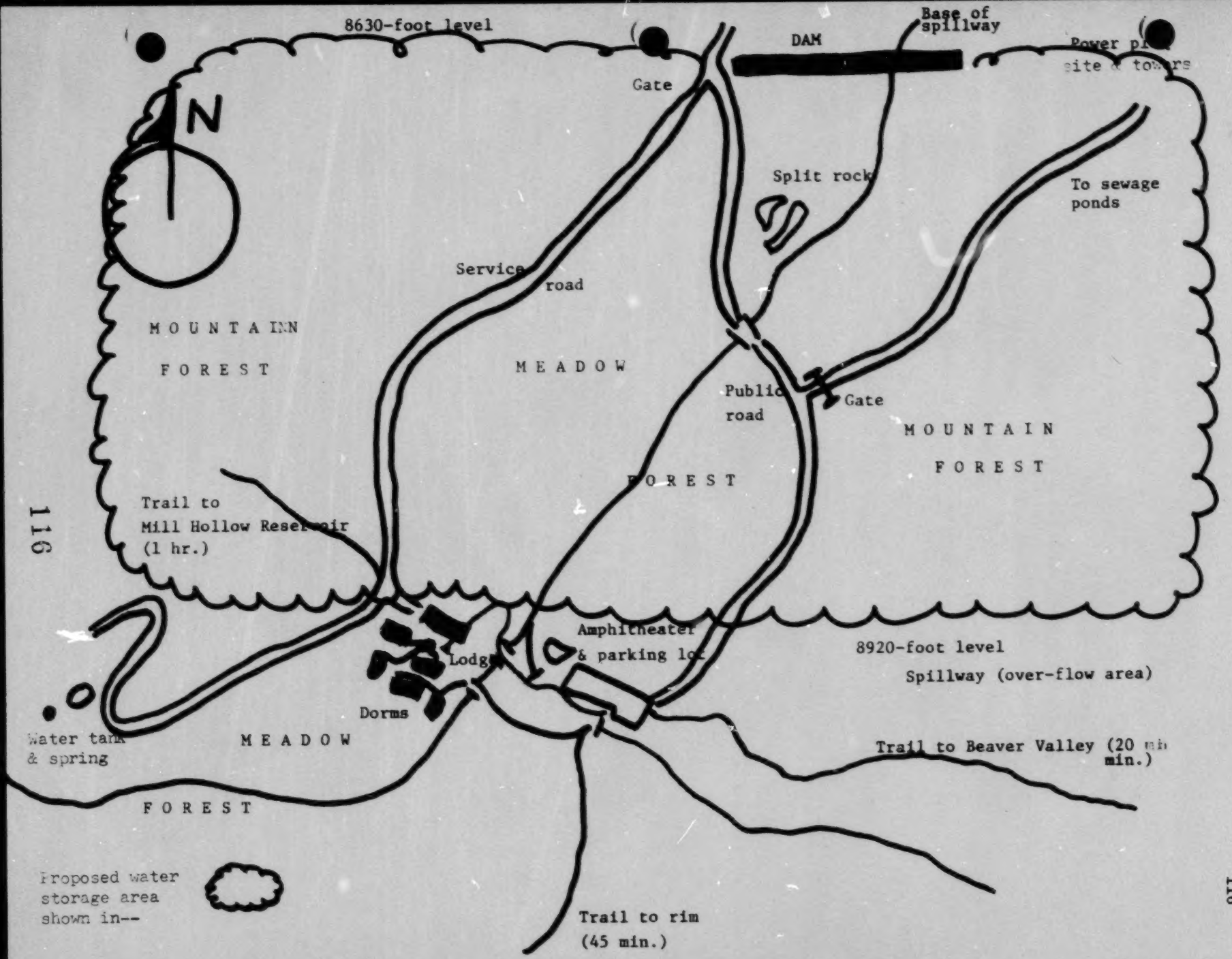
June 1974

The shortage of water and energy has led to the proposition than an earth-filled dam be built across East Fork in Section 7, Township 1 North, Range 7 East at the point indicated on the topographic map. The spillway will be at the 8920-foot level. At the base of the spillway near the Mill Hollow Guard Station will be a power generating plant that will serve the Kamas-Heber areas. The power line proposed will be of steel towers. The power line is proposed to run from the plant across the mountains to Woodland. The waters will be backed up in the reservoir within 20 feet of Mill Hollow Science Camp. At their peak the waters will be at the 8920-foot level. The dam will be at the bottom of Mill Hollow Canyon at the 8630-foot level. Waters from the dam and reservoir will eventually cover an approximate seven-mile area in the Mill Hollow Canyon.

The argument is that the dam will provide water storage for irrigation and residential use in the Provo River basin (as a part of the Central Utah Project), flood control, and, of course, a great fishing opportunity on the new reservoir.

Other arguments from conservationists are that the natural environment will be drastically changed, valuable timberland and timber will be destroyed, the stream flow will cease, livestock range changed, wildlife habitat and other natural elements, roads, and other man-made facilities, and general aesthetics of the environment will be totally altered.

Consider what you would do if you were the person on the card you have been given.


8630-foot level
Gate
DAM
Base of spillway
Power pl
site & tow rs
N
Split rock
To sewage ponds
Service road
MOUNTAIN FOREST
MEADOW
Public road
Gate
MOUNTAIN FOREST
FOREST
Trail to Mill Hollow Reservoir (1 hr.)
Amphitheater & parking lot
Lodge
8920-foot level
Spillway (over-flow area)
Dorms
Water tank & spring
MEADOW
Trail to Beaver Valley (20 min.)
FOREST
Proposed water storage area shown in--
Trail to rim (45 min.)

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Issue	Facts	Decision A	Feedback	Decision B	Feedback	Final Conclusion
ROLE: Student at West Lake Junior High						
1.A. Is there a possibility that the Mill Hollow area could be better than it is now? 1.B. What is likely to be the future if the plant and reservoir are built? 1.C. Would it be better to find another place to build a reservoir?						
ROLE: Owner Kamas City Pharmacy						
2.A. Since you are a town business leader should you press a campaign for the reservoir? 2.B. Should you sell your business if the town doesn't listen to you since business is so slow?						
ROLE: Biologist for Fish and Game						
3.A. Should you seek out others who are interested in practicing good conservation to support your position? 3.B. Should your personal and professional opinions be expressed to local townspeople?						

Issue	Facts	Decision A	Feedback	Decision B	Feedback	Final Conclusion
ROLE: Water engineer for the Hydrology Department of the State of Utah						
4.A. Should you try to get the local townspeople's support for the project? 4.B. If the decision was that the reservoir and power plant would not be built should you challenge the decision? 4.C. Should you find other good possible sites for a reservoir?						
ROLE: Sheepherder						
5.A. Should you get a town meeting of all people in the local town and advocate against the dam? 5.B. Should you make arrangements for the BLM to find another place to graze your sheep? 5.C. Should you quit your job if the reservoir were going to be built?						

WORKSHOP PRESENTATION OUTLINE

Session 2

SESSION 2

Section a: Science and Mathematics
Section b: Social studies

1. Sharing: development and sharing of assigned skills

2. Present critical reading skills for Level 9

3. Show critical thinking cassette, "Making Sure of Facts," with study guide. Study guide served as a mind set.

4. Show "Weather" cassette with study guide to be filled in during viewing. This dramatically shows the frustration students experience with this type of assignment.

5. Assignment

CONTENT AREA WORKSHOP

Second Session

Study Guide

Film: "Critical Thinking: Making Sure of Facts"

This film uses timely topics in dealing with reading listening, and television viewing to help demonstrate how to evaluate the facts about a particular situation. This involves knowing whether information is based on an eyewitness or secondary account, checking the sources of information, and assessing the skills and knowledge of the source.

Critical reading-thinking concepts presented in the film:

1. Evaluating content in terms of purpose
2. Recognizing the author's purpose
3. Evaluating author's qualifications
4. Differentiating between fact and opinion
5. Detecting propaganda
6. Judging reliability of information
7. Identifying unsupported generalizations and recognizing exaggerations
8. Anticipating forthcoming events
9. Reaching conclusion and making inferences
10. Applying implications to real life

WEATHER FILM

1. What is the narrator's background and experience?

2. What are some of the narrator's goals? List at least two.

3. How is opinion expressed? Give an example.

4. What proof is given for man's control over his environment?

5. From the facts given, what conclusion would you draw?

6. Does the narrator present ideas subjectively rather than objectively? Give an example of each.

7. Name some unanswered questions.

8. List any emotionally packed words you heard.

SAMPLE QUESTIONS

1. Does this mean you pay only for parts? What about labor? What about travel time fees? Fees for estimates?

2. The ad implies the company can serve you quickly because it has a large number of vans. What you want to know is exactly how long you'll have to wait.

3. Since the television industry didn't exist 40 years ago, does this mean the firm has eight repairmen with five years of service each?

4. Does the one hour refer to how long you will wait to get service or how long it will take to fix your set?

5. Why not free estimates on color sets? Is the estimate free if you decide not to have your black and white set repaired?

6. This implies that other firms are dishonest and also that this company will make repairs in your home instead of hauling your set to the shop. Is that always true?

7. Does this mean every set made is on display or every set the company sells is on display?

8. This superlative is granted by the company to itself—not awarded by any unbiased authority.

9. Does the company claim it *sells* and *services* all these brands or that it sells some and services others? The latter would have to be the case, since Silvertone is sold only by Sears.

10. Repairing a TV set to "factory standards" can mean only that the set will work again after it has been fixed.

11. Who authorized the firm to make the repairs? In what factory were the repairmen trained? Should you be particularly impressed by an advertiser's claim that his service people are highly competent?

WORKSHEET

Newspaper evaluation:

1. Box in every statement you feel states an opinion and write "O" in the box.

2. Underline direct facts.

3. How do you know the statements made are accurate in light of recent news?

4. Do you think this author knows what he's talking about? Why?

5. List any exaggerated statements made.

6. What events are predicted?

7. Name one conclusion you could expect from information given.

8. Does the structure of the article invoke a pre-conceived idea?

ASSIGNMENT

Second Session

1. Using the following:

    a. Newspaper article
    b. Magazine ad from your discipline
    c. Visual approach, i.e. cassette, film, filmstrip, slides, picture, prepare exercises for your classroom using the ninth-grade level critical and interpretive reading skills

2. Complete your journal assignment. Be certain to include the following:

    a. Steps you've taken for preparation
    b. Outside reading or study to increase personal growth
    c. Bonus experiences in the classroom
    d. Sharing experiences
    e. Giving students readiness activities

C O P Y 127

BURSTS OF HARD WORK EASE HEART TROUBLE

BOSTON (AP)--Regular periods of hard work, the strenuous, physical kind, apparently gives people some protection against dying from heart disease, medical researchers say.

A long-range study of men whose jobs require heavy, moderate and light energy output says the coronary death rate of those in the high activity category is half that of men with low activity jobs.

The study, published in the March 13 issue of the New England Journal of Medicine, says the different mortality rates hold true even when taking into account other coronary risk factors such as smoking, high blood pressure and previously diagnosed heart disease.

The new report, which strongly supports earlier studies suggesting hard labor may reduce the death risk of heart disease, comes from an extensive 22-year continuing study of 6,351 San Francisco Bay area longshoremen.

"During follow-up observation, 598 longshoremen 35 to 74 years old died from coronary heart disease," said the study's authors, Dr. Ralph S. Pappenbarger, Jr. and Wayne E. Hale.

"Sixty-six deaths were charged to the heavy work category, 107 to the moderate work category, and 425 to the light category," they said.

The researchers said hard work seemed particularly beneficial in reducing risk of "sudden death syndrome," in which people quickly die after suffering a massive heart attack.

The study, conducted by the University of California School of Public Health in Berkely and the California Department of Public Health, said the reasons for the hard work benefits were not known.

Answer the questions on the following page.

Answer the following:

1. Out of the 598 longshoremen who died from coronary heart disease write a fraction showing how many were in each of the following categories:

   a. Heavy work category =

   b. Moderate work category =

   c. Light work category =

2. Change each fraction above to a percent:

   a.

   b.

   c.

3. By comparing percents is this evidence conclusive to say hard work reduces heart attack?

4. Do you feel this study would pertain to other areas of work rather than just longshoremen?

5. In light of the study would you be more apt to find a job that requires physical work?

6. In your opinion was the study conducted at a reliable place? Why?

READ THE ATTACHED ADVERTISEMENT AND ANSWER THE FOLLOWING QUESTIONS:

1. What was the purpose for this advertisement?

2. How do you know this company is qualified to give you good service?

3. Does this company guarantee their work?

4. Will the company give you a free estimate of the cost before they do the work?

5. Does this company go outside of Salt Lake City to render their service? Does it cost more if they do?

6. Give an example of something in the advertisement you consider to be fact.

7. Give an example of something in the advertisement you consider to be opinion.

8. Give an example of something in the advertisement you consider to be an exaggeration.

9. Would you consider the statement "blowing bugs minds since 1959" a reliable statement? Why?

10. The five animals listed on the headstones in this advertisement are a mouse, a termite, a cockroach, an ant, and a black widow. How many of these animals are really "bugs"?

11. Would you have this company come out to your home to exterminate "bugs"? Why?

PEST CONTROL

STATEWIDE SERVICE

Blowing Bug's Minds Since 1959
We serve thousands of homes, hotels, apartment buildings, etc.
Every precaution taken to safeguard children and pets.
We Are Fully Licensed. We exterminate & control these & other PESTS.

Also Featuring:
COMPLETE TREE SERVICE
LANDSCAPING & YARD SPRAYING
FHA & VA INSPECTIONS

571-5211
IF NO ANSWER CALL 571-4515

ARTS
PEST CONTROL TECHNICIANS OF UTAH
ARTHUR JOHNSON – Owner
1268 EAST SEGO LILY DR. SANDY

AVA _____

WHY DO WE STILL HAVE MOUNTAINS?

DIRECTIONS: Watch and listen carefully to the above named film. Working in groups of two or three, answer the statements written below after the film has been shown.

1. Would you say that the narrator (person doing the talking in the film) spent most of his time telling you facts or opinions?

2. How do you know that the information presented in the film can be trusted?

3. How are facts expressed? Give an example.

4. The narrator stated that the United States has 18,000,000,000,000,000 (million billion) tons of soil or land above sea level and that 400,000,000 (million) tons of this soil in the form of sediment is washed out to sea each year. At this rate it would take 45,000,000 (million) years for all of the United States to be washed out to sea. Is this an exaggerated statement? Why?

5. Sum up in one sentence the message or idea the narrator is trying to pass on to you.

6. What is one of the great unsolved problems of today?

7. If you were a person concerned about the correct operation of the railroad that was talked about in the latter part of the film, would you need to be worried or concerned about what was found to be going on in the land underneath the railroad? Why? Would just a plain American citizen need to be worried?

EARTH SCIENCE

Name_____
Period_____
Activity_____

Newspaper: Evaluating Job Opportunities

Objective: Using critical thinking and interpretive reading skills

Directions: Refer to the job ads on the attached sheet and answer the following questions.

1. Underline all job ads which are related to science.

2. Name one job that seems to be the best one.

3. Why did you select this particular one?

4. Name some jobs that you could possibly get with a high school education.

5. What jobs would require an education beyond high school, training in college, or vocational education? Name a few.

6. Do you think these jobs are really available? Why?

7. What flowery ideas or inducements are used to attract individuals to the jobs?

8. Are any of the jobs shown for teenagers? If so, which ones?

9. Do these ads state facts generally or opinions?

10. Can you name one opinion?

UNDERGROUND MINING CAREERS with EXXON COMPANY, U.S.A.

UNDERGROUND JOB OPENINGS

OPERATIONS TECHNICIANS

Applicants should have significant experience in stope mining, drift mining, long hole drilling, raise boring, or related background.

MAINTENANCE SPECIALISTS

Applicants should have experience in underground electrical or mechanical maintenance.

OPERATIONS SPECIALISTS

Applicants should be fully certified to operate both single and double drum hoists.

EMPLOYEE BENEFITS

1. Savings and Investment Plan
2. Unused Retirement Policy
3. Life Insurance Protection
4. Sickness Benefits
5. Hospital, Surgical, Medical Plan
6. Discount on Exxon Products
7. Paid Vacation and Holidays
8. Educational Refunds

MONTHLY SALARY — EQUIVALENT HOURLY RATES:

Operations Technicians — $6.02 to $7.00/hour to start, Depending on Experience

Maintenance Specialists — $7.36/hour to start

Operations Specialists — $6.60/hour to start

FOR APPLICATIONS AND FURTHER INFORMATION CALL:

Mr. Ray J. Haydel, Employee Relations Supt.
(307) 265-7600 or (307) 358-3244

HIGHLAND URANIUM OPERATIONS

North of Douglas, Wyoming
(An Equal Opportunity Employer)

LANDMAN

I need an experienced person to supervise our department's land maintenance, [illegible] programs in both minerals (principally uranium) and oil & gas in the Rocky Mountain region. In addition to that primary function in Land, this person would be called upon for technical and administrative assistance in other department functions, as time and talent permitted. Person will be based in the Casper office. All replies will be treated with the utmost confidentiality. Send resume to:

ROBERT W. RIEDEL
EXPLORATION MANAGER

THE CLEVELAND-CLIFFS IRON COMPANY

P.O. Box 3140, Casper, WY 82601

ENGINEERS

PROJECT CONSTRUCTION ENGINEER

Civil, electrical or mechanical background required for base metal crushing, grinding, flotation, and [illegible] mill construction located in Central Arabian Desert of [illegible] at one year. The location offers a healthful climate and good housing in an established mining [illegible].

Salary will be based on qualifications with [illegible] benefits. Please send a complete resume in confidence to our Corporate Headquarters:

Michael J. Tighe
[illegible]

ROSARIO RESOURCES CORPORATION
375 Park Avenue ● New York, N.Y. 10022
an [illegible] employer m/f

SHOP FOREMAN

Large intermountain contractor has position available for shop foreman with management skills and having exp. as a construction mechanic and welder. Wages dependent upon qualifications and exp. Call 886-733-5282 for appointment or send resume to P.O. BOX 488, Twin Falls, Idaho 83301.

★ ★

GENERAL MAINTENANCE WORK

Jobs available in large commercial greenhouses. No special skills or experience necessary. Pleasant working conditions. $3.35 per hr. salary. Call Mr. Clayburn 561-4[illegible] or apply in person at Utah Bedding Inc. 540 West 10th So., Sandy.

☆ BRAZIL ☆

2 Letraset consultants to design and implement specialty training for International Computing in Sao Paulo. $[illegible] per mo. plus allowances. Bachelor's degree and Portuguese language ability required. Call Interac, 531-5488 for initial telephone interview.

★ ★

FENCE INSTALLATION

No exper. necessary, we will train, permanent employment. Apply in person.

UNITED FENCE CO.
2648 So. 300 West
Equal Opportunity Employer

DAY BUS BOYS

Great full or part time jobs. Present openings for [illegible] West North Temple, 125 West North Temple, Cottonwood, and Taylorsville. Apply Day's Personnel Office, 777 East [illegible] South.

AMBITIOUS MAN OR WOMAN prospects outside [illegible] for immediate employment. Training opportunity $[illegible] per week. Large national company. Cheap and large appliances. Call 261-[illegible] 9:[illegible] am ONLY. an equal opportunity employer.

BUS BOY

Vanderworth's Restaurant apply in person between 2 p.m. - 4 p.m. Good pay plus tips. Good hours for college students. (12:[illegible] p.m. - 2:30 p.m.) 99 Arrow Press Square, [illegible] 2.

SEMI-DRIVERS

Sleeper operation, [illegible] exper. ience required. [illegible] Diesel, 486-2202. 955 West Center Ave.

GUILLMAN for large hotel. Salary $[illegible] per hour plus tips. See Manager, Newhouse Hotel, 4th South and [illegible].

BEST COPY AVAILABLE

WORKSHEET

Name_____
Period_____

Science Article Evaluation

DIRECTIONS: Read the attached article and answer the following:

1. Underline direct facts.

2. Box in every statement you feel states an opinion.

3. Do you think the girl in the chimpanzee cage knows what she is talking about? Why?

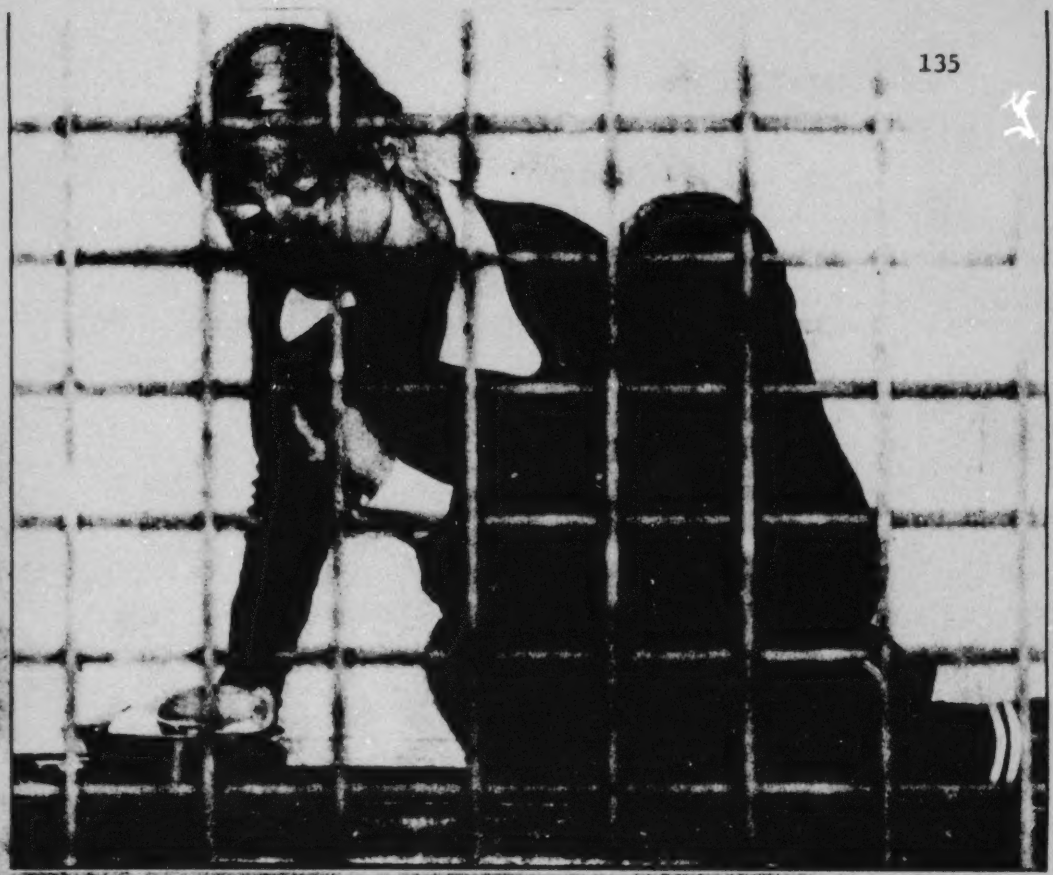
4. List any exaggerated statements made.

5. Does the structure of the article indicate the girl had a preconceived idea?

6. Do you agree with her final statement of how she feels about man? Why?

BEST COPY AVAILABLE

WHO'S NEW AT THE ZOO? —ME!



By Nancy Williams Nguyen, Central High School, Indianapolis, Indiana

I spent a day last spring at the Indianapolis zoo along with hundreds of other visitors. But my visit was unique. I spent the day inside the chimpanzee cage. This voluntary confinement was not a publicity stunt but my school sociology project. The project's purpose was to study how people would respond to a human locked in a zoo cage. I also wanted to learn how I would react to being treated as an object of curiosity.

The idea had stemmed from a joke; but after thinking about it, I called the zoo's educational director to explore the possibility of the experiment. The zoo was very helpful. They gave me the go-ahead a few weeks later.

No Backing Out

As I entered the cage I sensed a fear of confinement and gloom at the prospect of living in a 10 x 6 x 10 foot (about 3 x 1.8 x 3 meter) cage equipped only with a rubber ball, a wooden bench, and a suspended tire. On the outside of my cage a sign was placed: *Modern Man (Homo sapiens) The world's most dangerous animal has in the last 300 years caused the extinction of many species of wildlife—please protect wildlife.*

Wearing blue jeans and sweater, I stepped in and perched myself in plain sight of zoo visitors.

As the sea of faces passed by, I couldn't help but resent the lack of privacy. I also felt the agony of captivity caged animals must feel.

At various intervals I would swing on the tire swing and play with the ball. This created great interest among crowds. I took brief notes of people's reactions when there were no observers around.

Earlier my cage had been cleaned by my "keeper," who also cared for my nearest neighbor—a panther. At mealtime I was served a chimpanzee lunch. It consisted of fresh fruits, vegetables, vitamins—and as I found out later, horsemeat—yecch!

Being Looked At

The reactions of visitors were astonishing for the most part.

Younger children felt fear and ran to their mothers. Some felt pity and attempted to communicate with me. Others tried to feed me peanuts or part of their lunch, while others cried in fear or stared in astonishment. Parents were hard-pressed for an answer to their child's question, "What is that?" and hurried them on to the next cage. All in all, the younger children were the most pleasant to me.

Older children and teens expressed great curiosity and amusement. They asked hundreds of questions, which I answered silently by pointing to my sign.

The adults had the most interesting reactions. Many thought I was modeling or that my experiment was only a publicity stunt. Many thought I was portraying the missing link between man and ape.

The women seemed to be jealous, while the men smiled quietly as they felt I had "gone bananas."

After my five-hour stay had ended, I reflected on my experience. Strangely enough the cage seemed more like a protection than a restriction from society.

I feel man is basically a fearful and hostile animal, which makes him truly the most dangerous animal in the world! So who really belongs in a cage, humans or animals?

EARTH SCIENCE

Name_____
Period_____
Activity_____

Magazine Ad Evaluation

Objective: To develop critical and interpretive reading skills

Directions: Read the attached article and answer the following.

1. Underline each fact you read.

2. How does this ad relate to earth science?

3. Who paid for the article?

4. What major purpose can you see for this advertisement?

5. Can you see any propaganda statements made in the article? If so, name one.

6. Can you name an exaggerated statement?

7. Name two advantages you can see if coal is developed more:

   a.

   b.

8. Name one disadvantage in developing our coal resources.

9. In one sentence state a conclusion you get from this ad.

DECISION '75:

We have the tools to prevent higher unemployment.
Will we use them?

Unemployment is a byproduct of the energy crisis.

Continuing fuel shortages can slow production, close factories and cost jobs. Or imported fuels can wreck our economy--and cost jobs.

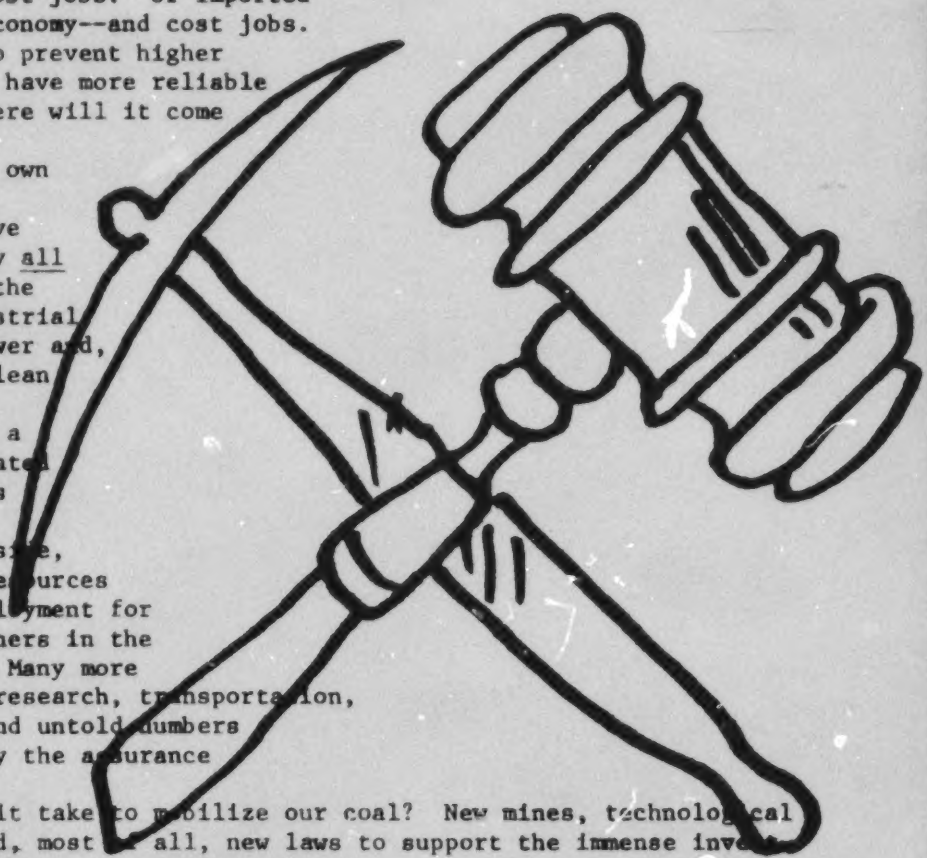
In a nutshell, to prevent higher unemployment, we must have more reliable energy, and soon. Where will it come from?

Coal. America's own energy source.

Right now, we have enough coal to satisfy all our energy needs for the next 300 years. Industrial energy, electrical power and, with more research, clean synthetic fuels.

But it will take a concentrated, coordinated effort to develop this vital resource.

On the positive side, developing our coal resources means more jobs. Employment for about 125,000 more miners in the coal industry alone. Many more thousands of jobs in research, transportation, and new equipment. And untold numbers of jobs made secure by the assurance of ample energy.



What tools will it take to mobilize our coal? New mines, technological development, money and, most of all, new laws to support the immense investments that will be needed. The President has recommended a program to "make greater use of domestic coal resources."

You can help. How?

First, send for our free booklet, "Decision '75--Coal is the Answer." You'll get the facts, so you can form your own opinion.

Then, if you have more questions, write us. But if you agree, after due consideration, that coal is, indeed, the primary resource that can lead us toward energy independence by 1985, make your views known to the people working on the problem.

This commitment is vital, but please don't wait to act. Time heals all wounds or makes them worse.

In the case of unemployment, it could get worse. Without coal, to help power the machinery of our economy

National Coal Association, 1130 17th St., N.W., Washington, D.C. 20036

COAL IS THE ANSWER. NOW.

NOTES

In the presentation of a film guide teachers became aware of a need to establish readiness for the worksheet and the vocabulary.

Teachers feel a need to establish readiness through providing background information of what critical reading skills are.

During role playing students were drawing experiences from self in taking part. Difficult to take role of other person assigned.

Realization and awareness of trying to achieve too much in terms of student expectations in teaching critical skills. Need to limit activity to presentation of one skill.

Lengthy assignments prove too oppressive. Students give up before completed.

SESSION 3

Section a: Science and mathematics
Section b: Social studies

1. Show and tell
2. Introduce Level 7 comprehension skills
3. Introduction of Group Reading Procedure (GRP): Oral presentation
4. Mapping: Visual approach using GRP
5. Handout word attack skills booklet for week of March 27

COMPREHENSION SKILLS

Upon entering level 7 students should have developed skill in comprehending material through:

1. Identifying the main idea
2. Reading for detail
3. Reading for sequential order
4. Reading for cause and effect relationship
5. Understanding the effect of punctuation on meaning

COMPREHENSION: BASIC SKILLS LESSON

Guided Reading Procedure for COMPREHENSION

STEP ONE: Tell student to read (or listen) and remember all he can. (a general purpose for reading)

STEP TWO: As reading is finished, selection is turned face down. Class is then asked to tell what they remember. Teacher records information recalled on board, overhead, etc. (Count to 35.) This will guarantee a response.

STEP THREE: Students will now realize the lack of completeness and be eager to re-read at this point. (We hope!)

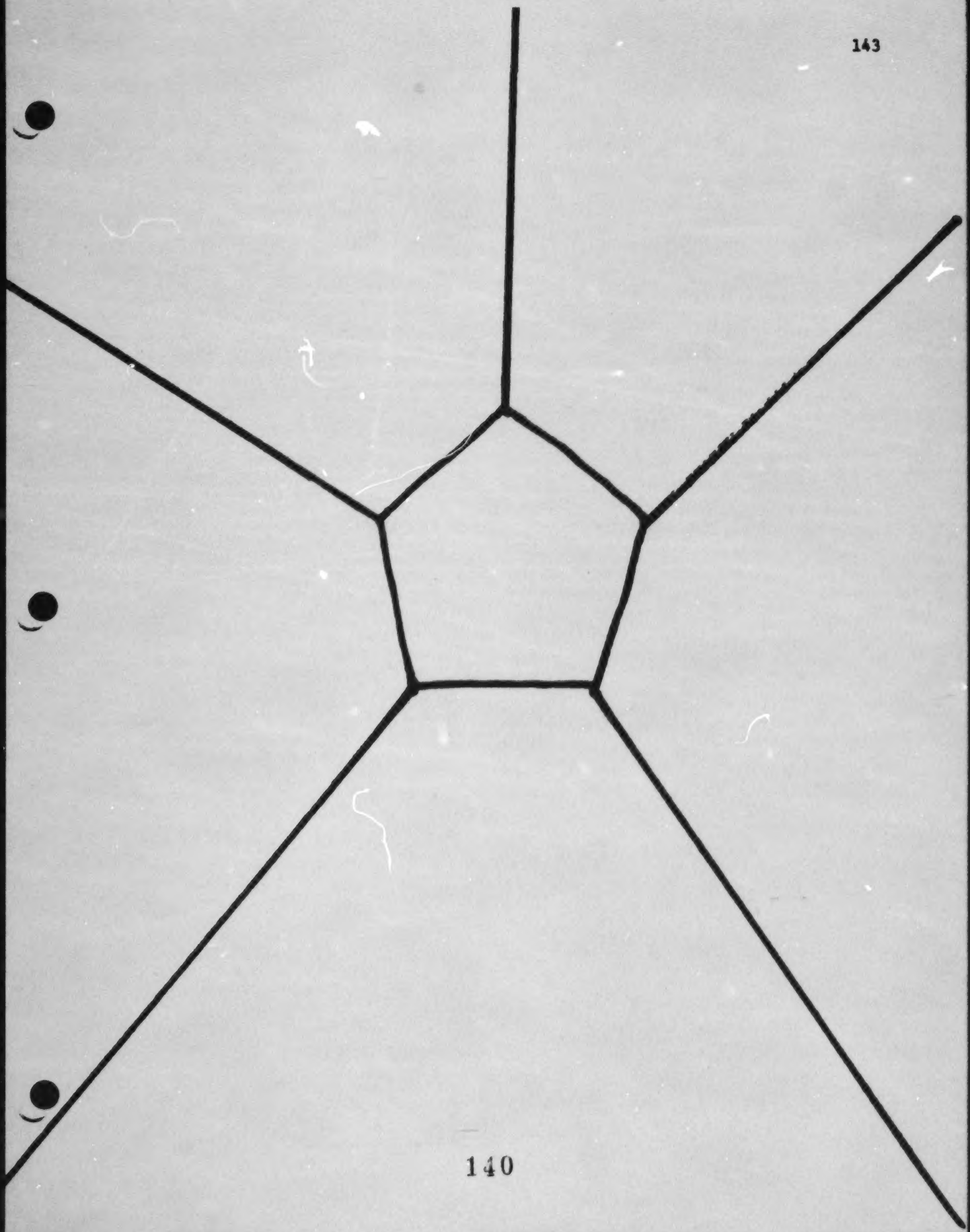
STEP FOUR: Class attempts organization of remembrances into outline, sequence pattern, or word-concept map.
Teacher questions:
- What was discussed first?
- What details followed:
- What was brought up next?
- What seems to be the main idea?

STEP FIVE: Teacher-directed specific questions for fullest understanding. Require syntehsis of new information and previously learned material.
"How does this relate to . . . ?"

STEP SIX: Diagnostic testing such as multiple choice, essay, etc.

STEP SEVEN: SQ3R

NOTES:
Selections should be for seven minutes of reading--approximately 900 words
Briefly establish appropriate readiness
Stress recall
Set a specific content purpose for reading



ASSIGNMENT

Session 3

1. Journal

2. Prepare an outline of the steps you might take in the presentation of the GRP and the GRP with mapping

   Some steps you might consider:

   a. Establish readiness
   b. Identify skills or concepts
   c. Present a follow-up activity

All teachers in the project did GRP and GRP with mapping but did it with their texts so no formal prepared material is available.

GROUP READING PROCEDURE

We would like to perform an activity in reading and organizing the information we have read.

Read the sheet given out entitled "Early Number Systems." When you have completed the reading, turn the sheet over on your desk.

EARLY NUMBER SYSTEMS

Arithmetic began with the need for counting. In ancient times the shepherd needed to count his sheep, the merchant his stock, the traveler the number of days he had been on the road or on the sea. Their method of counting was to compare the number of objects with the number of their fingers or to put such things as pebbles in a pile, one pebble for each object. Our word calculate has its origin in this old method of counting: calculus meant pebble.

In order to count large numbers of objects easily, these early men needed a method of grouping, and they began to arrange their pebbles in piles, each containing the same number of pebbles. Then, for each of these piles they would put one pebble in a different pile. Although a pile could contain any number of pebbles, the number most often used was ten, based on the number of fingers. The base ten of our present number system is the result of this early method of grouping. There were other bases, however, and we find reminders of them in present-day words or units. The base 12 is still used in some units of measurement. The base 60 still persists in the number of seconds in a minute and the number of minutes in an hour. The base two is used in our present-day electronic calculators. A system with base two is called a binary system.

One of the oldest instruments based on a system of grouping is the abacus. There are many different types of abacuses; some are still in use, especially among the Chinese. One type has rods representing units, tens, hundreds, etc. with beads to move along the rods to represent certain values.

Symbols for the numbers are called numerals. They originate from the desire to communicate the idea of "how many" to others. The earliest symbols came from pictures of such things as sticks or pebbles. The Greeks used the names of letters in their alphabet for numbers and usually wrote the first letters of these names as symbols for the numbers. The system which the Romans used is still in limited use today in chapter numbers, on faces of clocks, and in dates of public buildings.

The biggest stride in the evolution of the number system was made when symbols were chosen to indicate the number of units, from one to nine, and the same symbols were put in a certain place to indicate the number of piles of ten units each. Likewise, the number of piles of these tens of units was indicated by putting the same symbols in still a different place. This system was devised by the Hindus and brought to Europe by the Arabs; hence, it is called the Hindu-Arabic system, and today it is used in most of the world.

READING COMPREHENSION SKILLS

I. Steps taken for preparation

A. Participated in procedure of Group Reading Procedure (GRP) with group

B. Prepared a reading selection and formed my own outline in order to anticipate student response

II. Outside reading

A. "Spelling is Dull and Boring?" John Turner. Education Digest, December 1972.

B. "Linguists and Phonics." Robert Emans. The Education Digest, May 1973.

C. "The Right to Read." Education Briefing Paper. The Education Digest, November 1974.

D. "Dyslexia: A Sure Cure." Frank W. Freshour. The Education Digest, November, 1974.

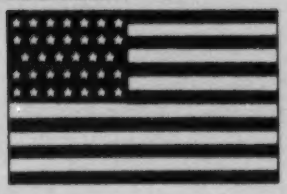
E. Goals for Reading Instruction." Dolores Durkin. The Education Digest, March, 1975.

F. "The Literate Children of British Primary Schools." Mary A. Cain. The Education Digest, March, 1975.

III. Evaluation of student performance

The students did well on this exercise and were surprised themselves at how much they could remember. My objective was to have them identify the main ideas and read for detail. They did this well using the spider map outline. On the evaluation the majority of students missed less than two questions. None missed more than four.

I followed the outline given in class without SQ_3R.



The sections in this chapter are: The nation tries to answer the slavery question ■ Tariffs inspire defense of states' rights ■ Slavery in the territories is disputed ■ Politics and the Supreme Court show signs of crisis.

THE NATION TRIES TO ANSWER THE SLAVERY QUESTION

Slavery is one of many sectional conflicts

North and South were fast becoming separate sections, each marked by its own ways of life, its own beliefs, and its own classes of people. These differences led to clashes over such issues as slavery and states' rights and over such economic questions as tariffs. Conflict between North and South was visible everywhere: in Congress, in settlements of the new western territories, in changing political parties, and in the Supreme Court. Because a final compromise could not be reached, a divided nation became two nations, forced to resolve their conflicts on the battlefield.

The slavery question, Thomas Jefferson wrote a friend in 1820, "like a fire bell in the night, awakens me and fills me with terror." In a nation dedicated to the belief that "all men are created equal," slavery was one of the chief causes of the nation's greatest political failure: the Civil War.

Ways are proposed to abolish slavery

The Founding Fathers had avoided making a final decision about slavery. The Constitution, you recall, said only that Congress could not pass a law before 1808 forbidding the importation of foreign slaves. Before that year, however, all the states except South Carolina had ended the foreign slave trade. The New England states as well as Pennsylvania had passed legislation that completely abolished slavery by the early 1800's. In New York and New Jersey, however, the process was gradual. Emancipation was not complete until 1827 in New York and 1846 in New Jersey.

Meanwhile, in 1808 Congress readily prohibited the importation of foreign slaves throughout the nation. Although many slaves were smuggled into the country afterward, the foreign slave trade was no longer very active. Within the slave states, of course, the domestic slave trade continued.

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Until Nat Turner's revolt and the first issue of William Lloyd Garrison's *Liberator* (page 405), many southerners joined with northerners in hoping slavery would end. They believed that slavery was evil and sought ways to abolish it easily.

Back to Africa One of the most popular plans was to send Negroes back to Africa, their ancestral homeland. With this goal the American Colonization Society was founded in 1817. Among its members were Judge Bushrod Washington, a nephew of George Washington; Henry Clay of Kentucky; and John Randolph, a distinguished Virginia statesman.

The American Colonization Society raised money and tried to interest free Negroes in starting a colony on the west coast of Africa. The colony of Liberia was established, but only about twelve thousand Negroes went there. For most Negroes, the United States was their home, as it had been for their fathers and grandfathers.

Furthermore, not many white supporters backed the colonization plan. Southerners attacked it bitterly, claiming that the South needed its free Negroes. Many anti-slavery northerners realized that the colonization plan would remove from the United States the Negroes most able to fight for Negro rights. The failure of the African colonization meant that Negroes were in the United States to stay. The American Colonization Society was well meaning, but slavery could not be ended so easily.

Abolition of slavery Other northerners felt that political leaders were attacking slavery too slowly. These abolitionists believed that slavery had no place in a democracy and should be ended at once. Abolitionists included many groups of people: northeasterners, northwesterners, Quakers, free Negroes, and others. You have already read about William Lloyd Garrison and about three Negro abolitionists: Frederick Douglass, Harriet Tubman, and Sojourner Truth. Each group worked in different ways for the same goal, and sometimes the members of the same group disagreed among themselves.

Abolitionists were often interested in other reforms, too, such as those concerning education and the treatment of the mentally ill. They wanted to purify the United States of its evils and make it a more democratic country. To accomplish these aims, the abolitionists addressed public meetings and formed discussion groups.

Anti-slavery feelings were also stirred by abolitionist literature. One of the most successful abolitionist books was *Uncle Tom's Cabin* by Harriet Beecher Stowe. *Uncle Tom's Cabin* was a dramatic story about the evils of slavery. It did not claim that all slaveowners were cruel. Instead, it said that as long as any slaveowners were cruel, and as long as slave trading broke up Negro families and gave slaves to these cruel masters, slavery was wrong. The book was a best seller. Americans bought half a million copies in the first five years after its publication in 1852. Over the next fifty years, millions saw a play based on the book.

The abolitionists not only made speeches and wrote books. They also helped thousands of slaves escape to freedom. Frederick Douglass, Harriet Tubman, and many others, both Negroes and whites, guided slaves to the North or Canada by way of the Underground Railroad (page 412).

Even after runaway slaves escaped from the South, they were not out of danger.

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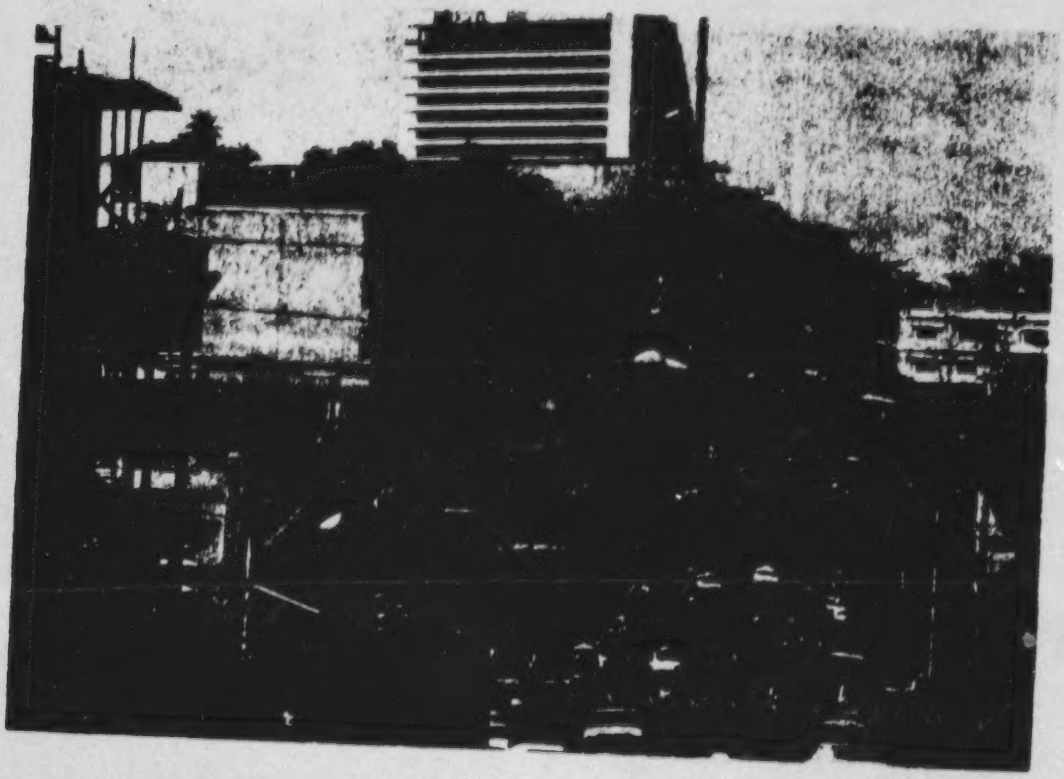
Liberia

In 1822 the American Colonization Society sent a group of freed Negro slaves to Africa to found the colony of Liberia. Eventually about twelve thousand American Negroes migrated to Liberia, and in 1847 it became an independent nation. The engraving at the left, made in 1849, shows part of Monrovia, Liberia's capital. Today, Monrovia is a busy, modern city (bottom).



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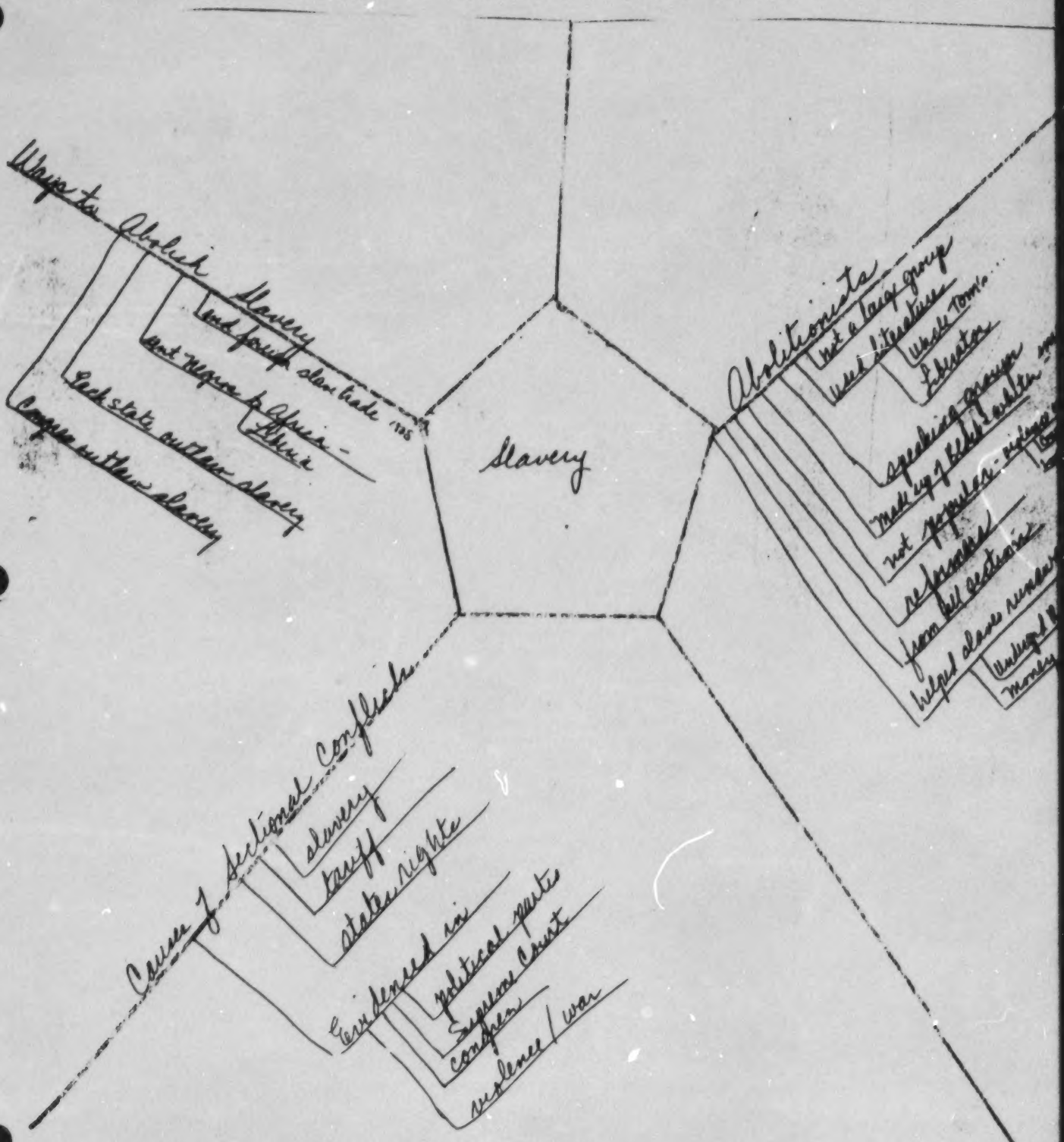
Runaway slaves were unwelcome in many northern states, particularly in the parts of Indiana, Ohio, and Illinois where southerners had settled. These settlers often sent runaway slaves back to their owners.

Anti-abolitionist sentiment Abolitionists often met strong opposition. Many northerners thought that the abolitionists were rabble-rousers who only wanted to make trouble. Many also feared that if all slaves were freed, the free Negroes would compete for land and jobs in the West.

Abolitionists were often jeered and mobbed. In some northern states abolitionists who helped runaway slaves were tarred and feathered. An abolitionist newspaper editor, Elijah Lovejoy, was murdered in Illinois. William Lloyd Garrison went so far as to say that the South should leave the Union so the nation would be free of slavery. For this he was captured by an angry Boston mob and barely escaped injury.

Before the Civil War the abolitionists did not gain many followers. But they constantly reminded all Americans that slavery contradicted the ideals of a democracy. Some Americans protested that the abolitionists held extreme views and wanted to accomplish their aims too quickly. But few, in the North, at least, denied that slavery was wrong.


Ways to Abolish Slavery
end foreign slave trade 1808
end Negro to Africa
Each state outlaw slavery
Congress outlaw slavery
Slavery
Abolitionists
not a large group
used literature
weak Dem.
Liberator
speaking groups
mailing of literature
not popular
petitions
from both sections
helped slaves runaway
Causes of Sectional Conflict
slavery
tariff
states rights
Engineered six
political parties
Supreme Court
compromises
violence / war

1. Although there were several sectional conflicts, the biggest disagreement was over _____.

2.-3. Name two ways that were proposed to end slavery:

_____ and _____

4. The modern African country named _____ was settled by American Negroes.

5. Those who believed in the immediate end of slavery everywhere were called _____.

6. T F There were abolitionists only in the North.

7. T F Abolitionists were usually interested in other reforms besides abolishing slavery.

8. T F Abolitionists seldom met any strong opposition because most people agreed with them.

9. One of the most important anti-slavery books written at the time was _____ by Harriet Beecher Stowe.

GUIDED READING PROCEDURES

STEP ONE: Establishing readiness

We invited a Vietnamese person to come and talk to the class. Questions were prepared by the class in advance.

a. Do you feel the United States has deserted your country?
b. Is it true many of your generals are dishonest and sell American goods for their own profit?
c. How do you feel towards communism?

The next day I let each student in turn express his/her feelings concerning further aid to Vietnam. Most were against further involvement stating, "We have helped all we can; now it's up to them."

STEP TWO: Concept to be learned

The class was asked what the overriding, all-important decision must now be. All agreed: Do we continue to give aid or do we let them fight without our help? To what extent is the United States obligated?

STEP THREE: Article to be read

"South Vietnam: The Final Reckoning," Time, March 31, 1975

I followed the first six steps of the Guided Reading Procedures for Comprehension. This included giving them the obvious essay question: Do we continue to give aid, or do we let the Indochinese people fight alone? Their responses were different in opinion, but each answer was supported with logical assumptions and conclusions.

GUIDED READING PROCEDURES WITH MAPPING

(Follow-up activity to Guided Reading Procedures activity)

STEP ONE: Establishing readiness

The entire first guided reading procedures activity served as a readiness activity.

STEP TWO: Concept to be learned

What is the effect of war on civilian populations?

STEP THREE: Article to be read

"The Refugees: 'We Were Scared,'" Time, March 31, 1975

Steps one through five of the Guided Reading Procedures for Comprehension were followed; this time using the "spider" drawn on the board.

EVALUATION: The second reading activity went much better than the first. Every student in the class took part in the second activity. Once they had "learned" the procedure they had no difficulty mapping the reading assignment.

STEPS FOR USING GRP AND GRP WITH MAPPING

1. Readiness discussion

   a. How to identify the main idea
   b. How to identify supporting information
   c. Stress importance of sequence and detail
   d. Stress importance of recall

2. Exercise GRP

   a. Give students "Is American Folklore All a Fake?" to read
   b. When all have finished, without referring to selection, students tell what they can remember from reading
   c. Each fact or idea is written on board
   d. After students have had a chance to respond and seem to have remembered quick recall information, teacher questions:

      (1) What was the main subject? (folklore vs. fakelore)
      (2) Which folklore characters does Professor Dorson claim to be fake and what are their characteristics?
      (3) How do they differ from real folklore characters?
      (4) What folklore characters does he say are real folklore?
      (5) What possibilities does Professor Dorson see for future folklore characters?
      (as students answer questions, list supporting facts under main ideas, removing each fact from the list first written from recall information)

   e. Show how main ideas are developed through use of supporting information

3. Using same reading, use GRP with mapping to further identify main ideas and supporting facts

4. Follow-up

   a. Students use GRP or GRP with mapping to reconstruct in their own words what they remember from the reading
   b. Teacher shows how this type of exercise can be used to organize information for making reports, for studying for tests, etc.

SKILLS USED:

1. Comprehension of what is read
2. Identification of main ideas
3. Identification of supporting information
4. Recall
5. Organizing in sequence
6. Re-word or re-write information using simple outline information

IS AMERICAN FOLKLORE ALL A FAKE?

Everyone out there who hasn't heard of Paul Bunyan and his faithful blue ox, Babe, raise your hands.

Just as we thought. We didn't see a single hand. That's probably because tales of tall Paul are some of the best known in American folklore.

In case you might have forgotten some of the details about Paul, though, we'll refresh your memory.

Paul Bunyan was a legendary lumberjack and camp boss in Minnesota. His stories grew taller and more widespread as he grew in fame between 1850 and 1900.

The stories leave no doubt that Bunyan was big: so big that 97 ax handles would barely measure around his hips. His wife combed his curly black hair every morning with a cross-cut saw, after first parting it with an ax. Paul took care of his beard himself, by uprooting a young pine tree and using its stiff branches to comb out the snarls.

Now a man that big obviously would have a hearty appetite, and Paul did. That's why he had a pancake griddle so big that he had some sawmill hands grease it by fastening slabs of bacon to their feet and then skating over the surface.

Paul had a helper named Babe the Blue Ox, and together they made quite a team. Babe wasn't what you might call a small ox. Each of his steps spanned two miles, for instance, and Babe's shoes were so mammoth that, while carrying one to his forge, a blacksmith kept sinking knee-deep into solid rock. (This created lake beds and assorted canyons, by the way.)

Eventually, the story goes, Paul moved west from Minnesota, which meant crossing hot, shadeless plains. It was during Paul's travels west that he sweat out the Great Salt Lake and created the Grand Canyon by dragging his double-bitted ax behind him when he got tired.

That's quite a legend. And, of course, nobody past the age of about six really believes it's true. But most people do believe that it's at least a true folk story--in other words, told originally by common people who worked at Paul's trade or lived in his area. Richard M. Dorson, a professor of folklore at Indiana University and recognized by many as the expert in the field, is not one of them.

Professor Dorson calls the Bunyan legend an example of fakelore--a word he invented for those stories that did not begin over campfires or around chuckwagons, but rather in the imagination of writers.

And Paul's not the only imposter. Professor Dorson also puts Pecos Bill, Johnny Appleseed, and a Pennsylvania steelworker named Joe Magarac in the fakelore category.

Let's start with Bunyan and Babe. Professor Dorson says they were created in 1914 by an advertising man named W. B. Laughhead, who had been hired by the Red River Lumber Company of Minneapolis to come up with some bright, interesting promotion pamphlets. Laughhead worked little Bunyan stories into the sales pitches.

The adman was amazed when people took to the huge lumberjack, and even more amazed when they started writing books, stories, newspaper articles, and movies about him as an authentic folk hero. In 1958 a Walt Disney cartoon feature of Paul Bunyan was released, and the ads for it even claimed that "hundreds of lumberjacks and sawmill hands had a hand in fashioning the giant's reputation for over 100 years."

Apart from its phoniness, one of the other features of fakelore most annoying to Professor Dorson is its "niceness." "The published works about Bunyan present an oversweet superman nothing at all like the gutsy, coarse figures in real folk stories," he says.

Another instance of too much sugar occurs in the fakelore legend of Johnny Appleseed, a character based on a man named John Chapman. Now, Chapman was a landowner who made a fortune in the early 1800's by leasing land for nurseries. He also drank a fair amount of whiskey and was known to be the life of the party on occasion.

That's a pretty far cry from wistful, quiet, poverty-stricken Johnny Appleseed, who spent his life wandering sadly around the country talking to squirrels and throwing out apple seeds to grow into beautiful orchards free for everyone.

And, according to Professor Dorson and other experts, Pecos Bill, the legendary cowboy who roped a cyclone with his lariat, and Joe Magarac, a Pennsylvania steelworker who supposedly squeezed molten steel with his bare hands, were both created by magazine writers. Pecos Bill first appeared in an article in Century magazine in 1923, and Joe Magarac made his debut in a 1931 issue of Scribner's. (Another giveaway to Magarac's fake status is that his name, translated from the Slavic, means "fool.")

Well, if we can't have Bunyan, Babe, Bill, Joe, or Johnny, then who can we have for folk heroes? Lots of people, most of whom you probably haven't heard of.

For instance, if you want a lumberjack hero, how about Otto Walta of Minnesota? Professor Dorson says he really was invented by logging people in the middle of the 19th century. Otto, like Paul, had amazing strength. People claimed he could bend a three-inch steel bar into a fishhook shape and pry up a pine stump--as an old man.

But Otto wasn't even what you might call refined. Once, when a neighbor asked him to help drag a black bear out of the bush, he accepted. But as soon as they got to the carcass, Otto ripped four pounds of flesh right out of it and ate his fill before moving the beast an inch.

There are plenty more real folk characters where Otto came from. There's John Luther "Casey" Jones, the engineer; and John Henry, the gandy dancer

(track layer). There's Davy Crockett and Abe Lincoln. There's George Knox, another lumberjack who supposedly could turn fish into venison and make whiskey pour from trees.

And that's just the past. Who knows what folk stars will be invented, reported, or exaggerated when the modern world gives its contribution to American lore. How will Evel Knievel be remembered? What tall tales about Muhammad Ali will spring up? Ralph Nader? Lassie?

History will have to wait and see. But we can all be sure that wherever there are Americans, there will always be a good story. And by the way, have you heard the one about the . . .

--From READ, March 28, 1975

NOTES

Science-Mathematics Section

Participants very eager to share ideas; they jump up and pass out projects as soon as the others sit down.

Concern expressed: Will students feel as if guinea pigs?

Others express positive results from students.

Assured: Hereafter less jarring of curriculum; more use of texts in the workshop.

Anxieties were vented. Question as to usefulness of teaching the skills expressed. Almost unanimously remaining teachers defended effort to teach and the projected long-term results of skills.

A math teacher who originally was going to drop the workshop asked for the floor and said: Kids are just like adults. They will do as little as they can get away with. We have to push them and expect them to improve their reading skills or they ain't going to do it!

WORKSHOP PRESENTATION OUTLINE

SESSION 4

Section a: Science and mathematics
Section b: Social studies

1. Identification of word attack skills, level 7

2. Assignment: Workbook, Programmed Word Attack for Teachers as take-home assignment

WORKSHOP PRESENTATION OUTLINE

SESSION 5

Section a: Science and mathematics
Section b: Social studies

1. Sharing
2. Present word identification skills, level 9
3. Oral presentation: word attack strategy
4. Pass out basic phonic rules
5. "Jabberwocky"
6. Assignment

WORD IDENTIFICATION SKILLS

By the end of level 9 students should have developed facility in the following skills:

1. Using generalizations and common variations governing sounds in attacking new words

2. Recognizing familiar elements in derived forms

3. Using syllabication and accent in identifying new words

4. Identifying and comprehending compound words

EFFECTIVE WORD ATTACK STRATEGY FOR STRANGE WORDS

1. Sound out the first letter

2. Search the surrounding context for clues
   Context clues remain the most important single aid for readers if they do not recognize a word at sight. Tell students to read to the end of the sentence or paragraph to see if they can identify the word. This focuses attention on what the author is trying to say and how the student would say it. With attention focused on meaning, the student will often be able to supply the word.

3. Examine the structure of the word
   Divide the word into parts. Look for prefixes and suffixes. Identify the root word. Try to sound out the word in syllables. Word-part analysis presupposes familiarity with frequently occurring prefixes and suffixes. These you should teach in your classes.

4. Turn to the dictionary when appropriate
   Students need help in developing the habit of dictionary use. The dictionary can help the student check the meaning and pronunciation of a word. Meaning can be found in light of the context of the student's reading. Glossaries serve the same purpose.

A formula which can be posted or otherwise used to remind the students of the sounding out procedure and figuring out of words:

S . . . Sound out the first letter

S . . . Use the sentence (or context) as far as needed to determine the word

S . . . Structure, divide the word and conquer it

D . . . Dictionary, last but not least

WORD IDENTIFICATION SKILLS

There is a fallacy which exists in teaching reading at any level. This is that teachers feel they must try to teach too much. SIMPLIFY! Teach less! Help the student specifically.

We need to teach for independence. There are few phonic rules which are stable 100% of the time in English language. Some are:

1. When "ture" is in the final syllable of a word it is unaccented.
2. When "tion" is in the final syllable of a word it is unaccented.
3. When a word ends in "ck" it has the same last sound as "look."
4. When "wr" begins a word, the "w" is silent.
5. When "kn" begins a word, the "k" is silent.
6. When "ght" appears in a word, the "gh" is silent.
7. "C" followed by an "o" or an "a" sounds like "k".
8. "Ch" together makes only one sound.
9. When "e" is followed by "w" it sounds "oo".

Instead of trying to teach 500 bits and pieces of phonics, devote the time to tell them how to proceed.

1. What is the initial sound of the word?
2. Be alert to blends; assist as needed.
3. The speech constants as consonants and those rules above.
4. Prefixes and suffixes as they occur in your subject.
5. Digraphs such as "ou" or "ow."
6. How to divide the word by "vccv" or "vcv" to help them sound the word out.

Participants to move into small groups. Using word attack strategy define underlined words in "Jabberwocky."

JABBERWOCKY

(Alice in Wonderland)

'Twas brillig, and the slithy toves
  Did gyre and gimble in the wabe;
All mimsy were the borogroves,
  And the mome raths outgrabe..

"Beware the Jabberwock, my son!
  The jaws that bite, the claws that catch!
Beware the Jubjub bird, and shun
  The frumious Bandersnatch!"

He took his vorpal sword in hand;
  Long time the manxome foe he sought--
So rested he by the Tumtum tree,
  And stood awhile in thought.

And as in uffish thought he stood,
  The Jabberwock, with eyes of flame,
Came whiffling through the tulgey wood,
  And burbled as it came!

One! Two! One! Two! And through and through
  The vorpal blade went snicker-snack!
He left it dead, and with its head
  He went galumphing back.

"And hast thou slain the Jabberwock?
  Come to my arms, my beamish boy!
O frabjous day! Callooh! Callay!"
  He chortled in his joy.

ASSIGNMENT

1. Journal

   Be sure to do all five sections as outlined in first session.

2. Keep a record of help given in your classes in word identification skills, approaches used: such as, the SSSD formula. We hope this formula would become part of your regular classroom experience.

3. Please submit and share any exercises you develop and try using the the critical thinking or the comprehension skills.

DIRECTIONS: Use the SSSD formula on all underlined words. As you come to them in the questions, do one question at a time. Apply the mathematical formula to the questions. This is provided for you on the board.

1. The diameter of a circle is 6.18 centimeters. What is the area?

2. A circle has a radius of 5-3/4 inches. What is the area?

3. A circle has a diameter of 6 inches. What is the circumference?

4. The area of a square is 625 square feet. What is the largest circle that can be inscribed in the square?

5. A wheel is 24 inches in circumference. If this wheel is on a vehicle that travels one mile, how many revolutions will the wheel make?

6. Two concentric circles are drawn. The radius of the smaller is 8 inches and the larger is 12 inches. What is the difference in circumference of the two?

1.	di am e ter	A straight line passing through the center of a circle
2.	cen ti me ter	A measure of length used in science equal to 0.39 of an inch
3.	ra di us	The distance from the center of a circle to the outside curve
4.	cir cum fer ence	The distance around the outside of a circle
5.	square	A four-sided figure having four equal sides and four equal angles
6.	in scribed	One figure within another one
7.	ve hi cle	A transportation device; car, truck, bicycle, etc.
8.	rev o lu tions	The motion of a figure about a center or axis, rotation
9.	con cen tric	Having the same center
10.	dif fer ence	Measure of being different

DIRECTIONS: Use exercises determining the pronunciation and the meaning of the words and then perform the exercises.

PROPERTIES: Division of powers

Let "a" be any nonzero real number, and let "m" and "n" be any positive integer.

1. if $m = n$ then $\frac{a^m}{a^n} = 1$

2. if $m > n$ then $\frac{a^m}{a^n} = a^{m-n}$

3. if $m < n$ then $\frac{a^m}{a^n} = \frac{1}{a^{n-m}}$

Power of a quotient

Let "a" and "b" be any real numbers where $b \neq 0$, and let "n" be any positive integer.

$$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$$

EXERCISES:

A. Which property of powers is illustrated by each equation?

1. $\frac{a^6}{a^4} = a^{6-4}$

2. $\left(\frac{3}{4}\right)^3 = \frac{3^3}{4^3}$

3. $\frac{2^8}{2^{10}} = \frac{1}{2^{10-8}}$

B. Simplify each expression.

4. $\frac{R^8}{R^3} =$

5. $\frac{(-3)^6}{(-3)^9} =$

6. $\left(\frac{2}{5}\right)^2 =$

C. Simplify each expression. Each exponent is a positive integer.

7. $\frac{R^{5a}S^{3b}T^{2c}}{R^{2a}S^{b}T^{c}} =$

I. Read the following questions and underline any word or term that you do not understand.

1. What were the terms of the treaty of surrender between Generals Grant and Lee?

2. What was the significance of Sherman's March to the Sea?

3. Trace the development of the conflict between North and South from 1820 to 1860.

4. Define the following terms: scalawag, carpetbagger, freedmen

5. List three provisions of the Reconstruction Act.

6. Explain why Jefferson Davis believed the death of Lincoln was a great loss to the South.

7. Identify the following people: Andrew Johnson, Thaddeus Stevens, John Wilkes Booth.

8. Fill in the blank with an appropriate word: The secret society called the _____ frightened Negroes to prevent them from participating in the government.

9. Describe the condition of the South immediately after the Civil War.

10. List some results of industrialization in the South.

11. How did the book Uncle Tom's Cabin influence people's thinking?

12. What effect did the Civil War have on the plantation system?

13. What was the purpose of the fourteenth amendment?

14. Review some of the outstanding points Lincoln made in the Gettysburg Address.

II. Use the SSSD method of understanding words on the terms you have underlined above. Write in a similar word that means the same thing. Write in the word below the sentence that has the underlined word.

III. If you finish, you may answer the questions.

TEACHERS' COMMENTS

Sharing:

Strengths of GRP obvious; awareness of need to move less rapidly through materials. Need to concern themselves with completeness of learning rather than quantity.

Used GRP to make total learning experience out of oral reading.

Teacher used GRP; students made outline and took notes. Post-test higher than classes who did not involve themselves in notetaking. Also, GRP alone without the outlining produced lower post-test scores than the above.

NOTES

Review:

Used GRP for evaluation of students' knowledge as pre-test and introduction to new unit. One science teacher used words from this pre-test to build new vocabulary for unit. Stress pronunciation.

Teachers expressing awareness of vocabulary needs in relation to comprehension.

Math teacher expressed need to dig for material but it is highly successful when presented. Very positive.

Used GRP and GRP with mapping as start for preparing research paper and step to outlining.

WORKSHOP PRESENTATION OUTLINE

SESSION 6

Section a: Mathematics and science
Section b: Social studies

1. Sharing
2. Karen: Sheets 1 and 2
3. Mary: Sheet 3
4. Sheet 4
   a. In 10 minutes find as many words and phrases peculiar to your subject as possible
   b. Feedback
   c. Choose a set of complex directions and simplify in a clear, concise, sequentially ordered manner
5. Present direction guide, Sheet 5
6. Present GRP expansion guide, Sheet 6
7. Present process chart and explain (math especially)
8. Math-science present parabole with written directions
9. Assignment

READING STUDY SKILLS

Upon entering level 7 most pupils should have attained facility in the following reading study skills:

1. Differentiating reading purposes
2. Following written directions
3. Using the parts of a book
4. Skimming for information
5. Making a written summary
6. Taking notes
7. Organizing information from several different sources
8. Using outlining as a study technique
9. Reading graphic material
10. Using guide words in the dictionary

Sheet 1

CONNECTIVE AND FUNCTION WORDS

Be aware of:

1. Cause and effect

   because, since, so that, also . . .

2. Those which suggest condition

   if, unless, although, nevertheless, still, in spite of . . .

3. Those that indicate contrast

   whereas, while, despite, notwithstanding, but, otherwise, rather not . . .

4. Those that state time relationships

   whereas, while, despite, notwithstanding, but, otherwise, rather, not, as, before, when, after, during, while, now, then, formerly, earlier, after that, since, later, next, last, soon, to begin with . . .

5. Those which introduce parallel ideas

   however, therefore, nevertheless, hence, accordingly, similarly, on the other hand, in conclusion, on the contrary . . .

6. Those of specific function

   thus, therefore, so, and so, consequently, accordingly . . .

7. Those which draw conclusions or summarize

   therefore, for this reason, as you can see, in short . . .

8. Those which indicate order or sequence

   any ordinal number (first, second, etc.) Writers often state the number of steps to make remembering easier.

9. Those which modify

   barely, constantly, evasively, apparently, currently . . .

10. Those which are relational

    between, parallel, against, adjacent, toward . . .

Sheet 2

THE TOP TWENTY CONNECTIVES

An awareness of connectives as signals of relationships between ideas is vital to intelligent reading and intelligible speaking. Teachers who agree with this concept can use the analysis of connectives to test, teach, and foster the use of connectives which may well enhance student comprehension and coherence.

Geography: but, when, however, although, thus, because, so, as, if, also, while, for example, then, therefore, since, yet, where, that is, perhaps, in fact

History: but, while, although, thus, if, as, even, however, because, until, since, when, then, yet, in fact, therefore, meanwhile, whether, perhaps, despite

Chemistry: but, if, since, for example, however, when, thus, if so, also, as, because, although, therefore, while, so, perhaps, yet, that is, until, such as

Biology: but, if, however, thus, for example, since, as, because, when, while, although, even, then, therefore, such as, also, yet, perhaps, that is, so

Physics: if, but, because, when, therefore, as, then, however, for example, also, although, since, while, thus, so, in other words, so that, on the other hand, consequently, furthermore

Sheet 3

FOLLOWING WRITTEN DIRECTIONS

Difficulty in following written directions can often be ascribed to:

1. The inability to read and understand the meaning of words frequently used in written directions.

2. Poorly written directions.

3. Little systematic instruction in reading and following written directions.

4. Conditioned and reinforced habits of inattention by harried, well-meaning teachers who can be counted on to patiently repeat directions for students who didn't bother to listen to them the first time.

5. Self-defeating teaching practices that condition students to rely on remembering and following teacher-given oral directions rather than reading, understanding, and acting on written directions they have analyzed and solved for themselves.

There are undoubtedly others, but these are the ones which can be most easily improved or eliminated by the teacher.

Sheet 4

SOME SUGGESTIONS FOR TEACHING "FOLLOWING DIRECTIONS"

1. Avoid excessive oral direction giving.

2. Simplify and rewrite complex, twisted directions from commercial materials.

3. Write clear, concise, sequentially ordered directions on all teacher-made worksheets and board work.

4. Have students read directions, then ask several students to tell in their own words what the directions are telling them to do.

The above procedures will work, however, only if the students already know the words used in the directions. That they do is frequently an erroneous assumption. The following on-going activities are suggested:

1. Scan workbooks, commercial activity sheets, and texts for words frequently used in written directions and make a list of them for use in vocabulary study.

2. Have the class compile a similar list which will make them more aware of written directions and problems which they could meet.

3. Introduce and develop understanding of words from lists made.

4. Have frequent practice sessions devoted to reading, understanding, and following written directions.

5. Identify for intensive study words and phrases peculiar to subject matter text directions.

Sheet 4 (Cont'd)

WORDS USED IN WRITTEN DIRECTIONS

add
affix
after
alike
alphabet
alphabetical
answer
answers
antonym
around
array
before
begin
beginning
behind
below
blank
bottom
box
circle
color
column
corner
cross out
cut
difference
different
direction
divide
dotted
draw
end
ending
erase
estimate
example
fill in
first (all ordinals)
fold
folder
glue
hold
homonym
horizontal
how
in between
in front of
last
left
line
make
mark
match
middle
miss
missing
multiply
opposite
order
over
page
paint
paper
paragraph
part
paste
phrase
picture
plural
prefix
question
read
rhyme
rhyming
right
ring
row
same
say
section
sentence
sentences
silent
silently
singular
space
spaces
spell
spelling
start
stop
subtract
top
trace
twice
under
underline
vertical
what
when
where
which
who
why

Sheet 5

FOLLOWING WRITTEN DIRECTIONS

Purpose: To determine how well a student can determine the steps to follow from reading a set of directions.

DIRECTIONS: Read the directions that must be followed in order to complete the _____ listed on page _____. Then write the answers to the following questions.

1. What is the second step of the _____?
2. What are you directed to do after _____?
3. What cautions does the author give before beginning?
4. Did you read the whole _____ before you proceeded to answer the questions?

Sheet 6

FOR GRP OR SUMMARIZING

I. Major Idea			
Chapter or paragraph			
a. Main idea	b. Main idea	c. Main idea	d. Main idea
↓	↓	↓	↓
a. Supporting ideas	b. Supporting ideas	c. Supporting ideas	d. Supporting ideas

Sheet 7

PROCESS CHART

Read the _____ (problem/experiment) and ask yourself:

What am I to find here?	What facts are given?	What processes should I use?	What would be a reasonable answer?	Carry out process	Check each step

ASSIGNMENT

1. Journal

2. Have one or more of your classes compile a list of words used in written directions in their texts.

3. Introduce and develop understanding of words from lists made.

4. Have at least two practice sessions devoted to reading, understanding, and following directions. We would like the results of this written up.

LSA 1: Current Science MAGAZINE ACTIVITY

DIRECTIONS: Students should read the articles indicated below and answer the questions relating to each one. The questions have been written to help students in critical thinking and comprehension. You may work quietly in groups of two or three to discuss and answer these questions after reading each article. Answers to these questions should be put on a separate sheet of paper.

"Strange Happenings: How Are They Caused?" (pages 4-5)

1. Read this article very carefully and then write down in one or two sentences what the main idea of the article is. (What is the article saying to you?)

2. From the information presented in the article, what conclusions can you come to about the following statement: Most scientists and observers of the strange happenings believed in the same explanation of what caused the strange happenings.

3. Listed below are several (effects) things which have happened or have been observed by people. For each happening (effect) that is listed, write down what you think probably was the cause.

   a. The glowing stone in St. Paris, Ohio.
   b. The toad rain in 1794 in France.
   c. Strange way animals behave before earthquakes.

4. Listed below are several statements. Indicate whether you think each statement is a fact or an opinion by placing an "F" or an "O" on your paper for each one.

   a. Barbara Chapman first reported about the glowing monument to Current Science.
   b. William R. Corliss has compiled accounts of strange happenings into three books.
   c. Some observers think the tombstone in St. Paris may glow because of reflected light.
   d. Some animals have been observed to act strangely before earthquakes.
   e. There are many tales of strange happenings in literature.
   f. Maybe there are strange things happening for which there are no explanations.

5. Statement "f" above seems to be one conclusion of the author about the information he has written about. Do you agree with this kind of a conclusion? Why?

LSA 1: Current Science magazine activity (cont'd)

"By Jupiter" (page 6)

6. Why do scientists send spacecraft on visits to other planets?

7. Do you think the information presented in this article is accurate? Why?

8. Is the idea expressed about the bubbling regions on Jupiter a fact or an opinion? What is the key word in the wording of this idea which really tells you whether it is a fact or an opinion?

"The Universe May Be 16 Billion Years Old" (page 10)

9. What is the main idea of this article?

"Noise--Sometimes Good, Sometimes Bad" (page 10)

10. Listed below are two effects or results. Write the cause for each of these results (effects).

    a. Cutting errors in machining jobs
    b. Help increase concentration and reduce errors

"Potatoes: Superfood of the Future" (page 11)

11. What is a spudologist?

12. Why does Dr. Thompson think that today's potatoes are a superfood?

"It's High Tide for Wave Power" (page 11)

13. There appears to be an exaggerated statement in this article. What is it?

"Taking Terror Out of Testing" (page 11)

14. Why does Dr. Rudman think creative students have a tendency to do poorly on standardized tests?

15. List four ways Dr. Rudman suggests to help students do better on standardized tests.

16. Who researched and wrote the article entitled "What's in a Cup of Coffee?"

LSA 1: Current Science magazine activity (cont'd)

17. What is the writer's background and experience?

18. Do you think this man knows what he is talking about? Why?

19. Think of some possible ideas for science projects from the articles you have read today and list them on your paper.

AVA 1: Cassette presentation (10 minutes)

Title: ADAPTATIONS OF PLANTS AND ANIMALS

Approach:
1. Pronounce word and have students repeat
2. Break word into syllables
3. Discuss "vcv" vowel-consonant pattern in base word
4. Discuss meaning of adaptation with students
5. Present film cassette

DIRECTIONS: Write down the questions from the blackboard and answer them as the film is being presented. Some questions relate to facts and some are designed for comprehension.

1. Why do all plants or animals have to adapt to changes in their environment?

2. How quickly do most adaptations in plants and animals take place?

3. What are the three main kinds of adaptations?

4. Why do some animals migrate and others do not?

5. What are some examples of adaptations by plants and animals to the following:

   a. the environment (seasons, climate, etc.)
   b. protection
   c. food-getting

6. How have desert plants adapted to the following specific conditions in their environment?

   a. high temperatures and soil heat
   b. lack of large amounts of water
   c. competition between plants for small amounts of available water

AVA 2: Cassette persentation (15 minutes)

Title: SEED GERMINATION

Purpose: This presentation is a follow-up activity to the seed planting project which students have just begun.

Approach:
1. Pronounce the word germination and have students repeat
2. Break word into syllables
3. Discuss vowel-consonant pattern in base word
4. Review meaning of germination
5. Present film cassette

DIRECTIONS: Answer questions on another sheet of paper.

1. What are three important things that all seeds must have to germinate?
2. Why are some seeds stored at temperatures from one to several degrees above freezing?
3. Why do honey locust seeds require so long a time in nature to germinate?
4. Why do seeds seem to germinate at different rates?
5. Why is it an advantage to have seeds in nature germinate at different times?
6. What is the most critical period for a germinating seed?
7. What are some of the reasons for excising (cutting) seed coats from embryoes (seed)?
8. What are some new problems mentioned in the film?
9. Thought question: Since seeds can absorb large amounts of water, what problem can you foresee to a ship that is loaded with a cargo of grain if it should spring a small leak into the area where the grain is stored?

VOCABULARY LIST

Chapter 20

seige
strategy
emancipation
blockade
document
sharecroppers
scalawags
unconditional
reconstruction
assassination
carpetbaggers
border states
tenant farmers
amendment
proclamation
unvexed

DIRECTION FOLLOWING AND UNDERSTANDING WORDS

Periods 2 and 4 were given assignment. No oral instructions or help given. Periods 5 and 6 were given assignment. I read entire worksheet with class following along silently. They were asked to raise hand when they heard a word they were not sure of. Words are underlined on worksheet.

RESULTS

Periods 2 and 4 have been averaging, as a class, 5 points higher than periods 5 and 6. On this assignment periods 5 and 6 averaged 31 out of 40. Periods 2 and 4 averaged 27 out of 40.

DIRECTIONS: Your main assignment is to get Chapter 20 read. Before reading the chapter read this worksheet all the way through. Then, as you recognize answers fill them in on the worksheet.
The first exercise includes statements concerning the Union and the Confederacy. In the space on this answer sheet write "1" if it is true for the Union; write "2" if it is true for the Confederacy; write "3" if it is true for both; write "4" if it is true for neither.

_____1. Had the greater population
_____2. Had greater resources and supplies
_____3. Had the more powerful navy
_____4. Counted heavily on military supplies from Europe
_____5. Used a blockade to help win the war
_____6. Used ironclad battleships
_____7. Suffered greater property damage during the war
_____8. Issued paper money that declined in value
_____9. Suffered a great loss when President Lincoln was assassinated
_____10. Gained control of the Mississippi after the Battle of Vicksburg
_____11. Resented the Congressional plan for reconstruction
_____12. Became solidly Democratic after the war
_____13. Industry boomed in this section during the war
_____14. Had able generals on its side
_____15. Had states on both sides of the Mississippi

MATCHING

_____16. A confederate victory which led to the death of Stonewall Jackson
_____17. Capital of the Confederacy
_____18. Captured by Farragut in the spring of 1862
_____19. Confederate stronghold on the Mississippi
_____20. Following this battle Lee turned back from his first invasion of the North
_____21. A Union victory that proved to be the turning point of the war for the North
_____22. A battle where Lee surrendered to Grant
_____23. The Union first attempt to take the Confederate capital
_____24. The name of the whole war, 1861-1865
_____25. The city that was taken by General Sherman

A. Antietam
B. Atlanta
C. Chancellorsville
D. Gettysburg
E. New Orleans
F. Richmond
G. Vicksburg
H. Appomottox
I. Bull Run
J. Civil War
K. Washington, D.C.
L. American Revolution
M. 7 days battle
N. Shiloh

IDENTIFICATION: Identify which side of the war the following men fought by writing North or South after each name

26. McClellan_____
27. Meade_____
28. Grant_____
29. Jackson_____
30. Sherman_____
31. Lee_____
32. Johnston_____
33. Farragut_____

IDENTIFY with a sentence about each one:

34. Emancipation Proclamation_____
35. John Wilkes Booth_____
36. Andrew Johnson_____
37. Reconstruction_____
38. Carpetbaggers_____
39. Scalawags_____
40. KuKluxKlan_____

WORDS OR PHRASES THAT GIVE DIRECTION

The following words or phrases were those found in a Math 2 textbook by the students of that class. The meanings of those words they did not understand were discussed and their findings follow those words.

find
write (many items were found to follow this beginning)
solve--find the answer
what (followed by many items)
check--see if it works out
compute--do the indicated work
change
total--the amount
borrow--take from another place to be used
subtract--take away
apply
complete--finish it up
simplify--find the answer as simply as you can
add
multiply--times
give
give number
draw
rename--give another name
answer true or false
arrange--organize in a proper order
study
show--indicate how it is to be done
regroup
think
insert--to place into something
graph--draw a graph or something
slide, flip, or turn--means to change the position of one object in attempting to make the object fit over another object similar to it
find solution--find the answer
study patterns
list
reconstruct--re-do or re-draw
construct--make or draw using the proper tools
copy and complete
select or choose
convert--to change in some fashion
use exponents
expand numbers

round off
divide
find the reciprocal--the value that you get when the number is in
fractional form and then turned upside down
give the simplest form
estimate
how many
examine
tell
name the opposite
use
rewrite
consider

FOLLOWING WRITTEN DIRECTIONS

Read all of the following directions and problems before you do anything else.

Answer the following questions.

1. Bill is in business and loses $2.00 on one day and makes a profit of $.75 on the second day. What is the change in his financial status over the two-day period?

2. If the temperature is 15°F and it drops 27°, what is the temperature at the end of the drop?

3. During one day 12 gallons of water were pumped out of a tank, and that night 17 gallons were pumped into the tank. During the next day 30 gallons were pumped out and 42 gallons were pumped into the tank that night.

   (a) What was the change in the volume of water in the tank from the morning of the first day to the morning of the third day?

   (b) How much water was in the tank on the morning of the first day?

   (c) What is the least amount of water which could have been in the tank on the morning of the first day?

   (d) How much water was there in the tank on the morning of the first day if there were 50 gallons in the tank on the morning of the third day?

This has been an exercise in following directions. Disregard all other directions; place your name at the top of the sheet and place it on my desk. Then keep quiet so we can see how long it takes your fellow students to follow directions properly.

FOLLOWING WRITTEN DIRECTIONS

Purpose: To determine how well a student can determine the steps to follow from reading a set of directions

DIRECTIONS: Read the directions that must be followed in order to complete the problems 1-13 listed on page 3. Then write the answers to the following questions. (Do not do the problems.)

1. What is the second step of the directions?

2. What are you directed to do after problem 9?

3. What cautions does the author give before beginning problem 9?

4. Did you read the whole directions for each group before you proceeded to answer the questions?

CLASS PROJECT

I. Major objective

To practice with the class reading, listening to, understanding, and following directions

II. Specific objectives

A. Dictate clearly a set of instructions with the goal of giving the instructions just once

B. Observe and record the number and kinds of responses which indicate:
   1. Lack of attention
   2. Lack of understanding
   3. Incomplete or vague instructions

C. Collect a list of words that need attention for meaning and pronunciation

FIRST PERIOD

III. Instructions

Today I am going to give your assignment in a different way, so please listen carefully to these instructions.

A. First, you will each need two sheets of paper--the small size. Matt, will you please hand out the paper.

B. On one sheet of paper put your regular heading and write "Word List" instead of assignment number.

C. On the other sheet of paper put your regular heading for assignment No. 11.

D. Now turn to page 128.

E. Read page 128 and the top of page 129. Study the examples carefully. Before you try to work any of the problems, write on your paper all of the words that you do not completely understand.

F. After we discuss the words you do not understand and the examples, you will work all of the problems on page 129.

IV. Results

A. Three students interrupted with irrelevant questions.

B. Three students asked questions which indicated they missed a portion of the instructions and, thus, a repetition of a previous statement was necessary to answer their questions.

C. Two students asked questions which demonstrated that a portion of the instructions were not complete or clear. Example: "What if I understand all of the words and examples?"

D. Twenty students appeared to understand the instructions without asking questions.

E. One student came in tardy after step three, necessitating a repetition up to that point.

F. The following words and phrases were written by the students:

rewrite, sums, fractional numeral, short cut, rename

ISA

READING, UNDERSTANDING AND FOLLOWING WRITTEN DIRECTIONS

Purpose: To find out how well a student can understand the steps to follow from reading a set of directions

DIRECTIONS:
1. Read the directions that must be followed in order to complete the activity listed below.
2. Put all answers on another sheet of paper.
3. Be sure to write the complete title on the answer paper.
4. Read completely each step then do what it says to do.
5. If you are unable to complete the assignment by following these written directions, I will be happy to help you by giving you oral directions; however, there is a limitation to these oral directions and that is that I must be able to answer your questions with only "yes" or "no" answers.

STEPS

1. For this investigation, use a piece of paper two inches wide and eleven inches long. A strip of notebook paper will do. Cut out a strip of paper this size. Several students could get their strips from one piece of notebook paper. Be shareful.
2. Hold one end of the strip in one hand.
3. With your other hand give the free end a half twist.
4. Now, bring the two ends together and fasten them with tape.
5. A ribbon of paper twisted in this way is known as a mobius strip.
6. Grasp the paper strip between your thumb and index finger. Slide your thumb and finger along the entire piece of paper. Do you return to the starting point? (1)_____
7. On the basis of this experiment, how many surfaces does the strip have? (2)_____
8. Run your finger along one edge of the strip. How many can you trace? (3)_____
9. If you were to cut lengthwise through the middle of the mobius strip with a pair of scissors and continue to cut until you return to your starting point, what would you expect to get? (4)_____ Will you get two strips? (5)_____ Will this cut add another edge? (6)_____ Will this cut add another surface? (7)_____
10. If you were to make two complete trips around the strip with one continuous cut, what would you predict (guess) will happen? (8)_____ _____
11. Cut lengthwise through the middle of the strip with a pair of scissors, and continue to cut until you return to your starting point. What happened? (9)_____ Does this agree with your prediction in answer four? (10)_____

12. Run your finger along one edge of the strip. Did this add another edge to the strip? (11)_____ Does this agree with your prediction in answer six? (12)_____
13. Run your finger and thumb along the entire piece of paper. Did this cut add another surface? (13)_____ Does this agree with your prediction in answer seven? (14)_____
14. Once again start to cut lengthwise this strip of paper. Continue to cut until you make two complete trips around the strip with continuous cut. What happened? (15)_____ Does this agree with your prediction in answer eight? (16)_____
15. What is the special name to this particular kind of strip of paper? (17)_____
16. Does this strip of paper have expected or unexpected things happen to it when it is cut lengthwise? (18)_____
17. For the answer to this question, list the word or words used in these directions that you did not know. (19)_____
_____
18. Thinking about yourself only, what is your biggest problem with written directions? (20)

NOTES

Science-Math section:

Recall: Strengthened by GRP

Reflections of students' resentment at having to think more with critical thinking. Others enjoy this challenge.

WORKSHOP PRESENTATION OUTLINE

SESSION 7

Section a: Science and mathematics
Section b: Social studies

1. Sharing
2. Karen: Present 7th grade vocabulary skills
3. Mary: Present prefixes
4. Karen: Present common roots
5. Karen: Present ladder
6. Mary: Building vocabulary
7. Sample worksheet using Greek roots "chron" and "sect"
8. Impedilexae
9. Assignment

VOCABULARY

Upon entering level 7 pupils should be skilled in adding words to their vocabulary through:

1. Using picture and context clues to word meaning
2. Incorporating precise terms into their total vocabulary
3. Understanding word denotation and connotation
4. Using the dictionary for word meanings
5. Understanding new words through known parts
6. Understanding synonyms

ROOTS

Twelve Roots Occurring in 2500 English Words

Root	Meaning	Derivatives
cap-	take, seize	capture, capable, captivate
duc-, duct	lead	conduct, duct, reduction
fac-, fec-, fic-	make, do	factory, benefactor, fiction
fer-	bear, carry	confer, different, ferry, refer
graph-, gram	write	telegraph, diagram, graphic
log-, logy	speech, study, word, reason, thought	biology, eulogy, logical, philosophy
mit-, miss	send	remit, transmission, commit
plic-, plex	fold, hold	duplex, simplicity, implicit
pon-, pons-, pos-	place, put	expose, proponent, position
spec-	to look, see, observe	aspect, specter, speculate, spectrum
ten-, tin-	to hold, to have	pertinacious, tenure
tend-, tens-	to stretch	attend, tense, tensile

PREFIXES

The fifteen most common prefixes account for more than 80 percent of the total number of prefixes used.

Prefix	Meaning
a, ab- (abs)	from
ad- (a-, ab-, ac-, af-, ag-, al-, an-, ap-, ar-, as-, atp)*	to, at, for, towards
be-	about, by
com- (co-, col-, con-, cor-,)*	with, together
de-	down, from, away
dis- (di-, dif-)	apart from
en- (em-)	into, in
e-, ex- (ef-, ec-, es-)	from, out of, formerly
in- (il-, im-, ir-)	not
pre-	before, in front of
pro-	in front of, forward in place of
re-*	back, again
sub- (suc-, suf-, sug-, sup-, sur-, sus-)	under, after
un-	not

*The three prefixes which appear most frequently

PARTS DEPARTMENT

Affixes (prefixes and suffixes) are syllables added to a root word to change its meaning. A prefix (pre, meaning in front of + fix, meaning to put) is a syllable fastened or put in front of a root. A suffix (suf, sub, meaning to put under or at the end of + fix) is a syllable put at the end of a root. Sometimes the last letter of a prefix is changed to make it fit the root better. For example, suf in suffix becomes sub in subtract. Sometimes the first letter of a suffix is changed for the same reason. For example, able in portable is ible in visible.

Listed below are some common roots, prefixes, and suffixes. Read the list carefully.

Roots

duc, duct	lead or bring	mis, mit	send, let go
fac, fect	make	port	carry
form, forma	form	scrib, script	write
ject	throw	tract	draw
manu	hand		

Prefixes

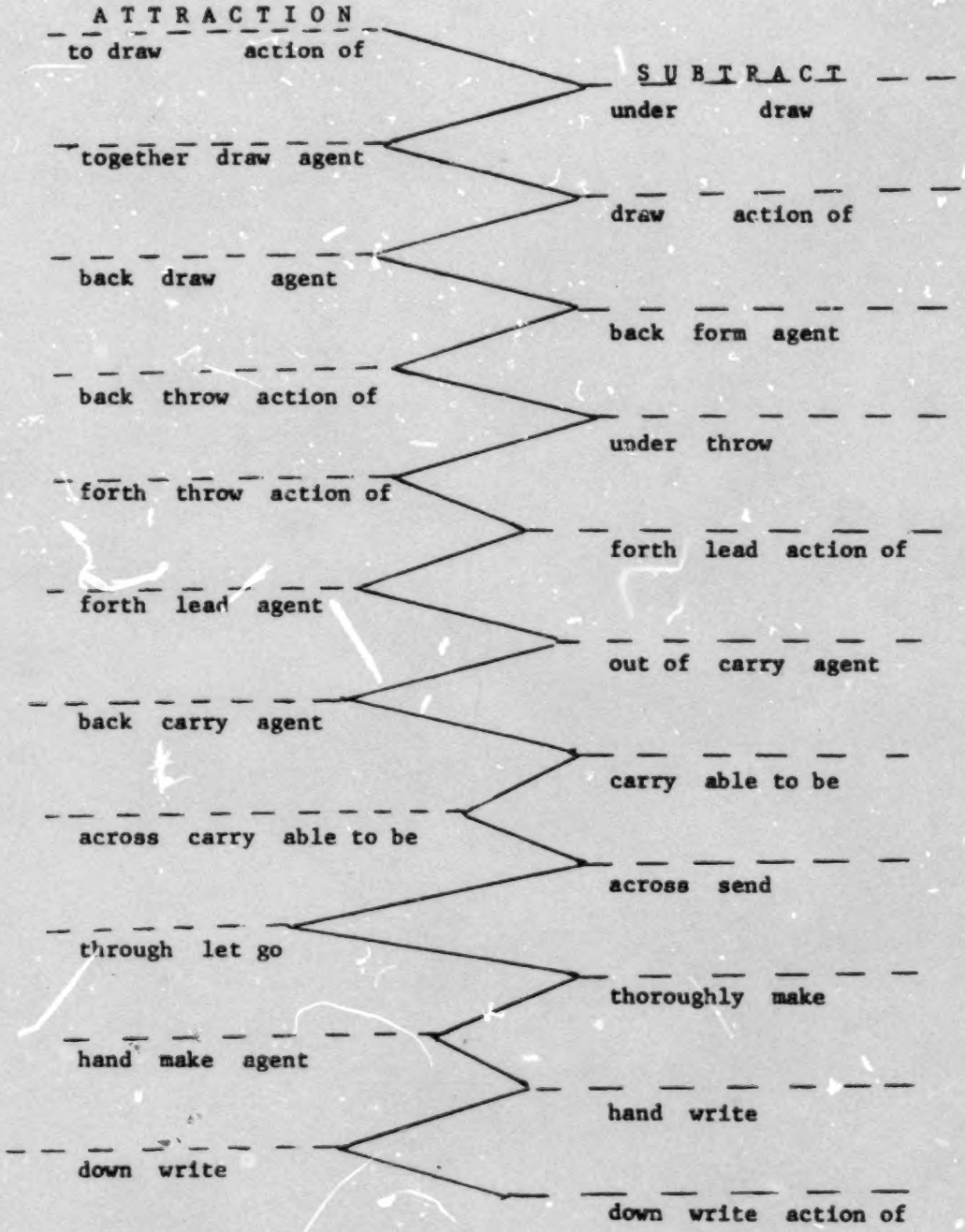
a, ad	to	pro	before, forth
co, com, con	with, together	re	back, again
de	down, away from	sub	under, below
e, ex	out, out of	trans	across
per	through, thoroughly		

Suffixes

able, ible	able to be	er, or	agent, instrument
ion	action of		

The words below can be linked together by roots and prefixes or suffixes to form a word chain. Each space in the word chain indicates a letter in the word. The first two have been worked for you. Fill in the missing links to finish the word chain.

contractor	manufacturer	producer	reporter
describe	manuscript	production	subject
description	perfect	projection	traction
exporter	permit	reformer	transmit
retractor	portable	rejection	transportable


ATTRACTION
to draw action of
together draw agent
back draw agent
back throw action of
forth throw action of
forth lead agent
back carry agent
across carry able to be
through let go
hand make agent
down write
SUBTRACT
under draw
draw action of
back form agent
under throw
forth lead action of
out of carry agent
carry able to be
across send
thoroughly make
hand write
down write action of

SCIENCE: BUILDING YOUR VOCABULARY

Key Roots and Affixes Method

Lists of some of the more important Greek and Latin roots and affixes are given here for your study. Some of the spellings may be changed slightly from the original because these are the forms as we use them today. You may wish to look each one up in a dictionary to see how many words are built on it (if so, use a good dictionary). Or you may wish to commit them to memory. The advantage of learning these word parts is that whenever you run across a new word containing these parts, you can usually unlock its meaning without a trip to the dictionary. At any rate, a student at your educational level should know these words and their parts. In each of the blank spaces, you write a word you know that contains the affix given in the first column.

Greek word roots and affixes

Root or affix	Meaning	Word using root or affix	Your word
acou, acu	to hear	acoustics	_____
auto	self	automatic	_____
amphi	on both sides	amphitheater	_____
anti	against, opposite	antibiotic	_____
arthr	joint	arthritis	_____
anthro, anthrop	man, mankind	philanthropy	_____
biblio	book	bibliography	_____
bio	life	biology	_____
cardi	heart	cardiac	_____
cephal	head	cephalopod	_____
chlor	green	chlorophyll	_____
chron	time	chronological	_____
cyt	cell	cytology	_____
dia	across, through	diameter	_____
epi	upon	epidemic	_____
gen	kinds, race, origin	genealogy	_____
geo	earth	geology	_____
graph	write, record	graphite	_____
hedron	solid figure with many faces	octohedron	_____
helio	sun	heliotherapy	_____
hemo	blood	hemophile	_____
hetero	mixed	heterogeneous	_____
homo	same, alike	homogeneous	_____
hydro	water	hydrolysis	_____
itis	inflammation of	tonsillitis	_____
log(y)	study of	astrology	_____
macro	large	macroscopic	_____
mania	craze for	maniac	_____
meter	measure	chronometer	_____
micro	small	microscope	_____
mono	one	monopoly	_____
neuro	nerve	neurotic	_____

Science: Building Your Vocabulary

Root or affix	Meaning	Word using root or affix	Your word
octo	eight	octopus	
ost, osteo	bone	osteopath	
para	beside, aside from	parameter	
patho	disease of	pathology	
peri	around	periscope	
phil	love	bibliophile	
phobos	fear	phobia	
phon	sound	phonograph	
poly	many	polygamy	
psyche	mind, soul	psychology	
scope	examine	stethoscope	
som, somat	body	chromosome	
syn	together	synchronize	
tach, tachy	swift, speed	tachometer	
tele	far, distance	telephone	
thera	to nurse	therapy	
zoo	animals	zoo	

To make certain that you understand how the above list of Greek word parts can be helpful to you, test yourself on the following list. Below are ten words that use the Greek roots and affixes in the list above. Using the list, divide each word into its parts. For example: perimeter: peri = around, meter = measure. Then write what you think is the correct definition for the word. When you are finished look up each word in the dictionary and see how close your definition comes to it.

1. psychotherapy
2. hemophile
3. zoology
4. geology
5. polyphony
6. anthropology
7. arthritis
8. neuropathy
9. heliotherapy
10. osteopath

Latin word roots and affixes

Root or affix	Meaning	Word using root or affix	Your word
ante	before	antecedent	
aqua	water	aqualung	
audio	hear	audiometer	
aur	ear	aural	
bene	well	benefit	
cap, cip, cept	take	capacious, capacity	
carn	flesh	carnivorous	
circum	around	circumference	
cord	heart	cordial	
corpus	body	corpse	
credo	belief	incredulous	

Science: Building Your Vocabulary

Root or affix	Meaning	Word using root or affix	Your word
gnos	to know	agnostic	_____
gon	angle	octagon	_____
hepta	seven	heptagon	_____
hexa	six	hexameter	_____
ideo	idea	ideology	_____
latry	worship	heliolatry	_____
path	feeling	apathetic	_____
syn, sym	together	symphony	_____
theo	god	theology	_____
verb	word	verbal	_____
virtu	skill	virtuoso	_____

This, of course, is just a short list of words you will encounter in your reading of science and other subjects. Learn them and their roots and you will save yourself many trips to the dictionary.

SOCIAL SCIENCE: BUILDING YOUR VOCABULARY

Key Roots and Affixes Method

Here is a list of some of the more important Greek and Latin roots and affixes that will help you. You may wish to do the following with them: (1) Make vocabulary cards on each of these terms that you don't already know and learn a few each day; (2) Look up these terms in the dictionary to see how many words are built around them. Make cards on those related words that you don't already know. (3) Refer to the list when you have difficulty with a new word.

Greek word roots and affixes

Root or affix	Meaning	Word using root or affix
amphi	around, both sides	amphitheater
anti	against	antimissile
auto	self	automatic
biblio	book	Bible
bio	life	biology
dia	across, through	diameter
epi	upon	epidemic
geo	earth	geography
graph	write, record	graphite
hetero	mixed	heterogeneous
homo	same, alike	homogeneous
macro	large	macroscopic
mania	craze for	maniac
meter	measure	speedometer
micro	small	microscope
mono	one	monopoly
peri	around	periscope
philo	love	philanthropic
phobos	fear	phobia
phono	sound	phonograph
poly	many	polygamy
psyche	mind, soul	psychology
scope	examine	microscope
syn	together, with	synchronize
tele	far, distance	telegraph

Before proceeding to the Latin roots and affixes, make certain that you understand how the above list can be helpful to you.

Below are ten words that use the Greek roots and affixes in the list above. Using this list, break each word down into its parts. An example is provided for you. Then look up the words in a dictionary and see how close the dictionary definition comes to matching the parts. Example: perimeter: peri = around; meter = measure.

Social Science: Building Your Vocabulary

1. telescope
2. bibliography
3. geology
4. phonograph
5. polyphonic
6. autobiography
7. anthropology
8. macroscopic
9. philology
10. bibliomania

Latin word roots and affixes

Root or affix	Meaning	Word using root or affix
ante	before	antedate
aqua	water	aqualung
audio	hear	audiometer
bene	well	benefit
circum	around	circumference
corpus	body	corpse
credo	belief	credit
dis	not, apart	disperse
dominus	lord	dominate
ego	I, self	ego
ex	out	exit
frater	brother	fraternize
in	not	incredible
inter	between	interact
locus	place	locality
mitto	send	transmit
mortis	death	mortuary
pater	father	paternity
ped	foot	pedal, pedicure
porto	carry	porter
post	after	P.S. (postscript)
pre	before	preview
pro	before	project
scribo	write	transcribe, scribe
solus	alone	solo
subter	under, secret	subterfuge
trans	across	transport
utilis	useful	utility
video	see	video

Now see if you can use the list above to discover the meaningful parts of the following words. Then look up each word in the dictionary and see how close to the normal meaning of the word this procedure brings you. Example: transport: trans, across; port, carry.

1. incredible
2. postmortem
3. circumscribe
4. corporal
5. dismiss
6. expatriate
7. aquarium
8. dominion
9. solitude
10. egocentric

Social Science: Building Your Vocabulary

Here are a few other roots, from both Greek and Latin, that are frequently found in words used in the social sciences. You will probably want to learn these roots since they are keys to understanding other words.

Root or affix	Meaning	Word using affix or root
anthro	man	anthropology
archos	leader	monarchy, oligarchy, anarchy
cracy (Greek, kratein)	rule	democracy, autocracy, theocracy, plutocracy
constitutus	stand	constitution, state, statute
demos	people	democracy, demographic
federis	league or pact	federal, confederation, confederate
ideo	idea	ideology
legis (lex)	law	legislature
nomy (Greek, nomos)	law	autonomy
olig	few	oligarchy, oligopoly
polis	city	political, policy
poly (Greek, polcin)	sell	monopoly
publicus	people	republic

Chron--time (Greek)

Choose a word from this list to complete each sentence.

1. chronicle
2. synchronize
3. chronic
4. chronologically
5. chronometer
6. anachronism

1. The poor fellow has had a sinus infection so long that it seems his trouble has become _____.
2. Would you call a lady's hoop skirt for street wear an _____?
3. A _____ is an instrument that keeps time with great accuracy.
4. Much of the literature of the colonial period of American history consists of sermons and _____.
5. The early movie producers could not _____ voice and action.
6. One test question in history was to list wars of our country _____.

Sect--cut (Latin)

Choose a word from this list to complete each sentence below.

1. bisect
2. intersect
3. vivisection
4. dissect
5. insect
6. section
7. sect
8. sector
9. sectarian

1. In biology class today we will _____ a frog.
2. Members of this little church are a _____ of the Baptist Church.
3. Why is a wasp a good example of a _____?
4. Liberty Street _____ Brach Avenue three blocks from here.
5. The main _____ of his ranch is across the state boundary lines.
6. The diameter of a circle _____ the circle.
7. The radii divided the circle into ten _____.
8. Some people oppose _____, though it benefits man.
9. Some _____ oppose a community church.

IMPEDILEXAE IN SCIENCE

Impedilexae is a term coined to designate words that create reading problems in specific content areas--i.e., that impede reading.

The words on this list are only a sampling. They do not include all the difficult vocabulary in the sciences. To these common terms might be added the specific technical vocabulary of each of the sciences. The list as it stands does, however, provide a valid basis for comparison of the vocabulary load of the various textbooks in each science. All roots and derivatives of words listed here should also be counted as impedilexae.

aberration
absorb
abundance
acceleration
acetate
agents
alkaline
alloy
alluvial
aluminum
amplitude
anemometer
applications
artesian
assumption
astronomical
atmosphere
atomic
attitude
attraction
aurora
axis

bacteria
barometer
beaker
behavior
biodegradable

calorie
capacitor
capacity
capillary
carbonate
catalyst
centrifugal
centripetal
characteristics
chromosphere
coefficient
collision
combustible
compensate
component
compound
compressed
compression
comprise
concave
condensation
conduction
conductor
concentrate
conservation
constant
constituents
contraction
convection
converted
convex
coolant
copper
crystallization
cylinder
cylindrical

deceleration
decompose
decomposition
dehydrated
density
desalination
detergent
diffusion
digestion
dilute
diodes
disintegrate
dissolve
distillation
distinguish

electrolysis
electrolyte
electromagnet
electron
elements
emission
emit
emulsion
environmental
essential
equation
equinox
equivalent
erosion
evaporation
existence
expansion
experiment

factors
filament
filtration
fission
flotation
fluorescent
fluid
formation
formula
fractionation
frequency
friction
fusion

gamma
galaxy
gaseous
glacial
gravitational
gravity

halogen
heaviness
heredity
homogeneous
humidity
hydrocarbon
hydrogenation

ignite
immerse
impenetrable
impurities
incidence
induction
inertia
insoluble
insulate
interference
inverse
ionization
isotope

kinetic

liberated
liquid
longitudinal

magnetic
magnitude
malleable
material
matter
megaton
metallic
meteorite
mineral
molecular
momentum

negative
nitrate
nitrogen
nonmetallic
nuclear
nucleus
nutrients

organism
oxidation
oxidize

IMPEDILEXAE IN MATHEMATICS

Impedilexae is a term coined to designate words that create reading problems in specific content areas--i.e., that impede reading.

This list is only a sampling. It does not include all the difficult vocabulary in mathematics. But the list does provide a basis for comparing the difficulty of various mathematic books as far as vocabulary is concerned. All roots and derivatives of words listed here should also be counted as impedilexae.

absolute
additive
adjacent
alternate
altitude
approximately
approximation
assigning
associated
associative
assumption

binary
bisect

cancellation
characteristics
circumference
coefficient
coincide
combination
commutative
computing
conceptual
conclusions
conditional
congruent
connecting
consecutive
constant
coordinates
cooresponding
cumulative

decimal
definition
demonstrated
denominator
derivation
determine
deviation
diagonal
diagram
difference
displacement
distributive
divisible

eliminated
equally
equation
equidistant
equilateral
equivalent
estimate
exclusive
exponential
expression

factor
formula
fractional
frequency

geometrical
graphically

horizontal

identical
illustrated
imaginary
inconsistent
indicate
inequality
infinite
intercept
intersect
inverse
irrational
isosceles

linear

measurement
midpoint
multiple
multiplication
mutually

negative
nonassociative
noncommutative
numerical

obtuse
operations
origins

parallel
parallelogram
parentheses
pentagon
perpendicular
polygon
polynomial
prime
principle
probability
projection
properties
proportion
proportional
quadratic
quadrilateral

rational
reciprocal
rectangle
relationship
replacement
represent
representation

segment
significant
simplify
simultaneous
solution
substitution
successive
supplementary
surface
symbol
symmetry

terminate
theorem
transform
trapezoid

unsolvable
unspecified

variable
variation
velocity
vertical

IMPEDILEXAE IN SOCIAL STUDIES

Impedilexae is a term coined to designate words that create reading problems in specific content areas--i.e., that impede reading.

The words on this list are only a sampling. The list does not include all the difficult vocabulary in social studies. It does, however, provide a common means for comparing the difficulty of various social studies texts as far as vocabulary is concerned. All roots and derivatives of words listed here should also be counted as impedilexae.

abandoned
abolish
abolitionist
absolute
abundance
acceleration
achievements
adaptability
admission
adventurous
administrative
adversaries
agitation
aggression
agricultural
aliens
allegiance
alluvial
amendment
ancient
annexation
apeasement
architecture
aristocratic
armistice
assassination
assistance
assurances
authority
automation
autonomous

barbarians
barriers
besieged
blockade
boundaries
bourgeoisie
boycott

capitalism
caravans
carpetbaggers
centuries
ceremonies
characteristics
chronological
circumstances
civilian
civilization
clash
classical
coexistence
collective
colonization
commerce
commercial
commodities
community
communication
comparative
compelled
comprehensive
compromise
concerned
concentration
concessions
conquered
conquests
conservation
conservative
consolidation
constitution
consumer
contemporary
continental
contrasted
contribution
corruption
crisis
crusade
cultivation
cultural
currency

decentralize
decisive
defeated
defending
deflation
democracy
denounced
density
dependencies
depreciation
depression
desperate
determined
dictatorship
diminishing
diplomacy
diplomatic
disarmament
discrimination
disputed
domesticated
dominate

economic
economically
elevation
emancipate
embargo
empire
enacted
endanger
engineering
enormous
enriched
enslaved
enterprise
entrepreneur
environmental
equilibrium
erosion
escarpment
established
evacuation
exchange
execution
existence
expedition
exploitation
exploration
extensive

federal
fertile
fertility
figurehead
finances
fiscal
flourished
founding
fractional
fragments
freedom
frontier
functional
fusion

genius
geographical
glaciation
global
grazing
guaranteed

hemisphere
humanitarian
humanity

ignorance
ill-fated
immediate
immigrants
infraction
impeached
imperialism
implements
impressed
inaugural
indemnity
indentured
independence
influences
inhabitants
initiative
injunction
irrigation
inscription

ASSIGNMENT

1. Journal
2. Survey your text and find words with Greek and Latin roots, prefixes, and suffixes
3. Next week tell us how you taught the list of words your survey found

EXAMPLES OF TEACHERS' COMPLETED CLASSROOM ASSIGNMENTS

ROOTS, PREFIXES AND SUFFIXES

Prefixes and suffixes are parts of words which can be added to them to change their meanings. A prefix is fastened to the front of the root. A suffix is put at the end of a root. Listed below are some roots, prefixes, and suffixes. Read them carefully.

Roots

duct, duc	lead or bring	place	to place, locate
federate	league or pact	hibit	to have
gress	step or walk	main	to stay
flict	strike	pair	get ready
promise	promise, abide by, decision	store	make strong
		build	put together
fit	to make	volt	to turn around, roll
claim	to cry out		

Prefixes

co, com, con	with, together	im	not, in
		trans	over, across
pro, pre	before, forth, forward	vade	to come in
		ex	out of
re	back, again		

Suffixes

able, ible	able to be	er, or	agent
ion, tion	action of	port	carry

DIRECTIONS: Make words by combining the word parts from the previous page.

Example: regress
bac. step

1. _____ together league

2. _____ again turn around

3. _____ before have

4. _____ before to cry out action of

5. _____ together promise

6. _____ back to stay

7. _____ back make strong

8. _____ together walk

9. _____ before to place

10. _____ again put together

11. _____ together strike

12. _____ again to get ready

13. _____ forward bring

14. _____ together lead

15. _____ again location

16. _____ forth make

17. _____ across carry

18. _____ out of carry

19. _____ in carry

20. _____ again stay

DIRECTIONS: Fill in the blanks of the following sentences with the words you formed on the preceding page.

1. Lincoln wanted to _____ good feelings between the North and South after the war.

2. Thousands of bales of cotton piled up on the docks of southern seaports because they could not _____ them to England.

3. The South wanted to _____ against the United States of America.

4. Lincoln had difficulty finding good generals to _____ the war.

5. The South named their country the _____ States of America.

6. Lincoln issued the Emancipation _____ to keep England from helping the South.

7. The North blockaded southern ports to _____ them from getting supplies from foreign countries.

8. Many freed slaves said they would _____ on the plantations to work for wages.

9. It took Georgia many years to _____ the area Sherman destroyed in his march to the sea.

10. Sherman destroyed the Georgia railroad tracks so that Georgia could not _____ food to Confederate armies.

11. The South could not _____ soldiers wounded or killed in battle.

12. Northern business greatly increased their _____ during the Civil War.

13. The South was counting on England to _____supplies to them to help them win the war.

14. Both the North and the South elected a _____ of their own to run the governments.

15. Both the North and the South _____d many times before they started fighting each other.

16. The South did not have equipment to _____ their damaged roads.

17. In his famous march to the sea, Sherman destroyed Georgia's ability to _____ crops.

18. Lincoln _____d a fair and just plan by which the South could rejoin the United States.

19. Thomas Jefferson predicted that a violent _____ would occur if the slavery issue was not decided quickly.

ROOT WORDS AND AFFIXES

The root word is the base word. The prefix is a short syllable that is added to the beginning of a root word. Adding a prefix to a root word usually changes the meaning of the root word.

Example: The prefix un- often means not or the opposite of.
The root word tidy means neat.
If you add the prefix un- to the root word, the new word, untidy, means "not neat."

The word which is added to the ending of a root word is called a suffix.

Example: The root word soft, by adding -ly to the end of the word will make the word softly.

DIRECTIONS: Here are ten words. Draw a line under the root word in each of these words.

American	boundary
product	coastal
topography	transportation
island	continental
industry	manufacture

DIRECTIONS: Circle the prefix and put a square around the suffix of each of these words.

American	boundary
product	coastal
topography	transportation
island	continental
industry	manufacture

DIRECTIONS: Read each of the sentences below and choose a word from the list to complete each sentence.

un-American	deduction	boundary
productive	industrial	anti-American
topography	coast	deport
inland	industrialize	manufacture
export	continental	import
pro-American	inductive	island
transport	coastal	transportation
continent	manufacturing	boundless
manufactured	relay	inlay

1. The textile industry _____ clothing to _____ to Canada.

2. Utah is located approximately 700 miles _____ from the Pacific _____.

3. _____ is vital in transporting perishable goods throughout the United States.

4. Un-American means tha same as _____, while an opposite meaning to both would be _____.

5. The North American _____ is located in the Western Hemisphere.

6. _____ means to bring goods into the country while _____ means to forcibly send people out of the country.

7. _____ Revolution was the first step toward mass production.

8. The _____ of the Atlantic coastal area is a lot different than on the Pacific side.

9. The 49th parallel is the _____ between Canada and the United States.

10. In the mid 1850's it was pretty hard to _____ goods across the _____ Divide.

GEOGRAPHY

Below are four prefixes and twelve word roots found in Chapter 47. Use the prefixes and the roots, or the roots themselves, to form as many actual words as you can, and use each word in a sentence.

Example: Geo + graphy = geography
Geography is my favorite subject.

NOTE: Use only the roots and prefixes shown here.

Here is how the scoring will be:

More than 12 words and sentences:	You should be teaching your own class
10-12 words and sentences:	You have graduated from Electric Company
7- 9 words and sentences:	You should watch Electric Company
4- 6 words and sentences:	You should watch Sesame Street
Below 4 words and sentences:	NO WAY, RAY!

PREFIXES	
de	down, away from
ad	to
per	thoroughly, through
ex	out of

ROOTS	
topo	place
graphy	to write, record
geo	earth
mit	to let go
port	carry
trans	across
haust	to pull
fect	make
apt	fit
plete	fill
culture	cultivate
agri	field

Now make up some words using only the roots and prefixes above, and give your meaning of each word.

ROOTS, PREFIXES, AND SUFFIXES

Prefixes and suffixes are parts of words which can be added to them to change their meanings. A prefix is fastened to the front of the root. The root is the part of the word that conveys its essential meaning. A suffix is put at the end of a root. Listed below are some roots, prefixes, and suffixes. Read them carefully.

Roots

spar	to scatter	dent	bite
fort	strong	source	origin
tens	stretch	merg	move
fav	to favor	stimul	arouse
occup	to possess	cov	hide
top	place	spect	look at, examine
graph	draw, describe, record		

Prefixes

ex, e	out of	in, un	not
re	back, again	dis	from

Suffixes

ify	to make or cause

DIRECTIONS: Make words by combining the word parts above. Example:

uncover
not hide

1. _____
   out of move

2. _____
   again look at

3. _____
   not to favor

4. _____
   to scatter

5. _____
   from hide

6. _____
   not strong

7. _____
   not bite

8. _____
   to possess

9. _____
   place describe

10. _____
    out stretch

11. _____
    back origin

12. _____
    arouse

DIRECTIONS: Fill in the blanks of the following sentences with the words you formed on the preceding page.

1. Although the Canadian population has increased rapidly in recent years, most of the country is still very _____ settled.

2. The United States and Canada share a 3,986-mile boundary that has been _____ for over a hundred years.

3. Canada can be divided roughly into six _____ regions--the Appalachian Highlands, the Saint Lawrence Lowlands, the Canadian Prairie, the Canadian Rockies, the Canadian Pacific Coast and the Canadian Shield.

4. The Canadian Rockies are an _____ of the American Rockies.

5. A generally _____ climate is one reason why Canada's development has not been even more rapid.

6. The Atlantic seaboard has a long, _____ coastline which provides many good harbors.

7. Minerals are the most valuable of all Canada's _____.

8. With all these advantages in her favor, Canada has _____ as an industrial power in the space of a few short years.

9. Today Canadian industries are growing as never before. World War II _____ Canadian manufacturing.

10. Recent oil _____ have made Canada an important producer of "black gold."

11. Mining is the principle _____ of the Canadian people.

12. Canada stands today as one of the most prosperous and _____ nations in the world.

SCIENCE: BUILDING YOUR VOCABULARY

Key Roots and Affixes Method

Lists of some of the more important Greek and Latin roots and affixes are given here for your study. Some of the spellings may be changed slightly from the original because these are the forms as we use them today. You may wish to look each one up in a dictionary to see how many words are built on it. (If so, use a good dictionary.) Or you may wish to commit them to memory. The advantage of learning these word parts is that whenever you run across a new word containing these parts, you can usually unlock its meaning without a trip to the dictionary. At any rate, a student at your educational level should know these words and their parts. In each of the blank spaces, you write a word you know that contains the affix given in the first column.

Greek word roots and affixes

Root or affix	Meaning	Word using root or affix	Your word
acou, acu	to hear	acoustics	_____
auto	self	automatic	_____
amphi	on both sides	amphitheater	_____
anti	against, opposite	antibiotic	_____
arthr	joint	arthritis	_____
anthro, anthrop	man, mankind	philanthropy	_____
biblio	book	bibliography	_____
bio	life	biology	_____
cardi	heart	cardiac	_____
cephal	head	cephalopod	_____
chlor	green	chlorophyll	_____
chron	time	chronological	_____
cyt	cell	cytology	_____
dia	across, through	diameter	_____
epi	upon	epidemic	_____
gen	kinds, race, origin	genealogy	_____
geo	earth	geology	_____
graph	write, record	graphite	_____
hedron	solid figure with many faces	octohedron	_____
helio	sun	heliotherapy	_____
hemo	blood	hemophile	_____
hetero	mixed	heterogeneous	_____
homo	same, alike	homogeneous	_____
hydro	water	hydrolysis	_____
itis	inflammation of	tonsillitis	_____
log(y)	study of	astrology	_____
macro	large	macroscopic	_____
mania	craze for	maniac	_____
meter	measure	chronometer	_____
micro	small	microscope	_____
mono	one	monopoly	_____
neuro	nerve	neurotic	_____

Science: Building Your Vocabulary

Root or affix	Meaning	Word using root or affix	Your word
octo	eight	octopus	
ost, osteo	bone	osteopath	
para	beside, aside from	parameter	
patho	disease of	pathology	
peri	around	periscope	
phil	love	bibliophile	
phobos	fear	phobia	
phon	sound	phonography	
poly	many	polygamy	
psyche	mind, soul	psychology	
scope	examine	stethoscope	
som, somat	body	chromosome	
syn	together	synchronize	
tach, tachy	swift, speed	tachometer	
tele	far, distance	telephone	
thera	to nurse	therapy	
zoo	animals	zoo	

To make certain that you understand how the above list of Greek word parts can be helpful to you, test yourself on the following list. Below are ten words that use the Greek roots and affixes in the list above. Using the list, divide each word into its parts. For example: perimeter: peri = around; meter = measure. Then write what you think is the correct definition for the word. When you are finished look up each word in the dictionary and see how close your definition comes to it.

		Definition			Definition
1.	psychotherapy		6.	anthropology	
2.	hemophile		7.	arthritis	
3.	zoology		8.	neuropathy	
4.	geology		9.	heliotherapy	
5.	polyphony		10.	osteopath	

Latin word roots and affixes

Root or affix	Meaning	Word using root or affix	Your word
ante	before	antecedent	
aqua	water	aqualung	
audio	hear	audiometer	
aur	ear	aural	
bene	well	benefit	
cap, cip, cept	take	capacious, capacity	
carn	flesh	carnivorous	
circum	around	circumference	
cord	heart	cordial	
corpus	body	corpse	
credo	belief	incredulous	

Root or affix	Meaning	Word using root or affix	Your word
digit	finger, toe	digital	
dis	not, apart	disappear	
dominus	lord	dominate	
duc, duct	lead	conductor	
ego	I, self	ego	
ex	out	exit	
frater	brother	fraternize	
in	not	incredible	
inter	between	interact	
locus	place	locality	
mitto,mit	send	transmit	
mortis, mort	death	mortality	
ocul	eye	oculist	
pater	father	paternal	
ped	foot	octoped	
port	carry	porter, transport	
post	after	posticous	
pre	before	premedical	
pro	before	project, procambium	
sanguin, sangui	blood	consanguinity	
scribe	write	transcribe	
solus	alone	solo	
somn	sleep	insomnia	
subter	under, secret	subterranean	
trans	across	transport	
utilis	useful	utility	
video	see	video	

Now see if you can use the guide to Latin roots and affixes to find the parts of the following words. Follow the same directions as in the last vocabulary check. Then look up each word in the dictionary and see how close the meaning of the combined parts is to the dictionary definition. (Example: transport: trans = across; port = carry)

	Definition		Definition
1. postmortem		6. inaudible	
2. circumscribe		7. proscribe	
3. subsonic		8. corporal	
4. solar		9. captivate	
5. inscribe		10. egocentric	

Here are a few other roots, from both Greek and Latin, that are frequently found in words used in the sciences as well as your general readings.

Root or affix	Meaning	Word using root or affix	Your word
a-, an-	without	apathy	
aesth, esth	feeling, perception	aesthetic, esthetic	
caco	bad	cacophony	
cosm	order, world	cosmos	

Science: Building Your Vocabulary

Root or affix	Meaning	Word using root or affix	Your word
eu	good	euphony	_____
etym	true meaning	etymology	_____
gnos	to know	agnostic	_____
gon	angle	octagon	_____
hepta	seven	heptagon	_____
hexa	six	hexameter	_____
ideo	idea	ideology	_____
latry	worship	heliolatry	_____
path	feeling	apathetic	_____
syn, sym	together	symphony	_____
theo	god	theology	_____
verb	word	verbal	_____
virtu	skill	virtuoso	_____

This, of course, is just a short list of words you will encounter in your reading of science and other subjects. Learn them and their roots and you will save yourself many trips to the dictionary.

QUIZ ON BUILDING YOUR VOCABULARY

DIRECTIONS: Write in the meaning of each term.

	Suffix, prefix or root word	Sample word	Meaning
1.	biblio	bibliography	
2.	dis	distance	
3.	dia	diameter	
4.	geo	geology	
5.	homo	homo-sapien	
6.	meter	centimeter	
7.	microscopic	microscope	
8.	aqua	aquatic	
9.	ante	antecedent	
10.	subterranean	subterranean	
11.	mar	marine	
12.	logy	geology	
13.	thermo	thermacline	
14.	sal	salinity	
15.	pro	processes	
16.	organ	organelle	
17.	chron	michron	
18.	graphic	stereographic	
19.	pre	precipitation	
20.	mit, motto	admittance	
21.	duc, duct	conduction	
22.	inter	interact	
23.	dis	distill	
24.	hep	heptagon	

NOTES

Math: Worst fears confirmed--students didn't know meaning or pronunciation of words

Teachers suggested in both sessions that a classroom manual of impedilexae and roots, prefixes, and suffixes be printed to be used throughout the school. Suggested correlation with English.

WORKSHOP PRESENTATION OUTLINE

SESSION 8

Section a: Science and mathematics
Section b: Social studies

1. Sharing
2. Follow-up on SSSD
3. Mathematics words
4. Vocabulary words, level 9
5. Vocabulary development
6. Principles of vocabulary
7. Divided page, Vocabulary-Slide
8. Assignment

SAMPLE PROCEDURE FOR SSSD FORMULA ASSIGNMENT

Follow-up for the SSSD Formula

Select a paragraph or selection which you wish the student to read. Underline selected words to be identified and defined according to context.

1. Look at the underlined word(s). If you do not know it, use the first S in the formula.
2. If the sound doesn't help you, try the next S.
3. Look back at the word. Did the sentence help you decide what it was? If not, try the next S.
4. If sound and sentence did not help you, did the structure give you any clues? If not, try the D.

Examples of words to use to explain formula:

S	Sound	Seizure--sē	(when two vowels are together the sound is long)
S	Sentence	Neurologist	(A neurologist is a doctor who treats diseases of the nervous system.)
S	Structure	Peninsula or Transportable	pen/ in/ su/ la trans/ port/ able (teach roots and prefixes to assist in identifying)
D	Dictionary	Perspicuous, or trepidatious	

FORMULA:

S Sound out first letter
S Sentence. Read as far as needed to figure out the word
S Structure. Divide the word and conquer
D Dictionary

MATHEMATICS WORDS

These are "Must Know"

add
addition
angle
area
arithmetic
average
base
base-ten
billion
borrowing
carrying
center
chart
check
circle
clockwise
closed
column
common
compare
comparing
compass
count
counting
cube
decimal
definition
diagram
diameter
difference
digit
direction
distance
divide
dividend
division
divisible
divisor
dot
double
eight
empty set
equal
equation
estimate
even
factor
figure
five
foot
four
fraction
fractional
graph
greater
greatest
group
half
height
horizontal
hour
improper
index
length
less
line
long division
mathematical
lowest
mathematics
measure
measurement
million
mixed
multiple
multiplication
multiplier
multiply
nine
not
number
numeral
numerator
odd
one
opposite
pair
parallel
place
plane
plus
point
prime
problem
product
proper
quart
rectangle
remainder
right
Roman
round
rounded
rounding
ruler
sample
second
segment
sentence
set
seven
short
side
sign
simplest
six
solve
solving
square
straight
subtract
subtraction
sum
symbol
system
table
take away
ten
ten
tens
term
testing
three
total
triangle
true
two
units
unlike
value
vertical
weight
whole
width
width
word
year
yard
zero

MATHEMATICS WORDS

Teach as Needed

abacus
abscissa
absolute
accuracy
acute
addend
additive
adjacent
algebra
algorithm
alternate
altimeter
altitude
amplitude
analogue
analysis
annexing
antilogarithm
antipodal
antipode
apex
apothem
approximate
arc
arcaine
argand
array
ascending
associative
assumption
asymptote
axiom
axis
Babylonian
balance
bar graph
base of parallelogram
binary base
betweenness
biased
biconditional
binary
binomial
bisect
bits
bolyai-lobachevskian
boundary
braces
bridging tens
broken curve
broken line
calculate
calibrated
cancel
capacity
cardinal number
cardiod
caret
cartesian
casting out
celsius
central
centroid
characteristic
Chinese numerals
chord
circular
circumcenter
circumcircle
circumference
circumscribe
circumsphere
clock arithmetic
closed dot
closed figure
closed ray
closed region
closed sentence
closure
coefficient
cofunctions
collection
collinear
cologarithm
combination
combine
commensurable
common divisor
common logarithm
commutative
comparable
comparison
complement
complete
complex
component
composite
compound
computation
compute
computer
concave
concentric
concurrent
condition
cone
conformal
congruent
conjecture
conjugate
conjun
conjunction
consecutive
consequent
consistent
constant
construct
containment
continued
continuous
continuum
contrapositive
converse
convex
coordinates
coplanar
corollary
correspond
cosine
coterminal
counterexample
cross
cryptogram
cubed
cubit
cumulative
curve
cycle
cycloid
cyclometer
cylinder

Mathematics words, teach as needed

data
decade
decagon
decimal notation
repeating decimal
decision
decoding
decrease
deduction
degree
denominator
dense
denumerable
dependent
depress
derivative
descending
determinants
deviation
diagonal
set diagram
dihedral
dimension
direct proportion
direct variation
directed angle
directed distance
directed numbers
directed segment
direction of a ray
directrix
discrete
discriminant
disjoint
disjunction
distributive
divisibility
dodecagon
domain
dot product
double angle
doubling
draft angle
duodecimal
eccentricity
edge
Eg
Egyptian numerals
element
elevation
ellipse
empirical
enclose
end
endpoint
English system
ensemble
enumerate
equal ratios
equality
equate
equator
equiangular
equichord point
equidistant
equilateral
equivalence
equivalent
error
estimating
Euclidean geometry
evaluate
event
exceed
exclusive
expanded
expansion
exponent
expression
exterior
external
extract
extraneous
extrapolation
extremes
face
factorial
factoring
factorization
false
family
format
field
finite
focal
focus
foot of a perpendicular
form
formula
fractional equation
join
joint
lateral
latitude
lattice
law
leading
leg
lamma
lever
like
limit
linear
literal
locus
logarithm
logic
magic square
magnitude
major
Mantissa
map
matrix
maximum
Mayan digits
mean
measure of angle
measure of central tendency
median
member
mental
meridian
meter
method
metric
micro
midparallel
midplane
midpoint
minimum
minor
minuend
minus
mixed expression
mode
modular
modules
monomial
more
motion
multinomial
multiplicand
mutually
natural
necessary
negation
negative
nine-point circle
non-adjacent
nonagon
non-Euclidean
non-linear
non-metric
non-negative

Mathematics words, teach as needed

non-periodic
non-simple
nonsingular
non-terminating
norm
notation
null
numeration
numerical
oblique
obtuse
octagon
one-to-one
open
operation
opposite operations
opposite rays
order
origin
ordinal
orthocenter
hogo
orthogonal
oval
pair of angles
parabola
paradox
parallel planes
parallel rays
parallelogram
parallelopiped
parameter
partial
path
pattern
pentagon
percentage
percentile
perfect
perimeter
period
permissible replacements
permutation
perpendicular
pi
pictograph
picture graph
placeholder
planar
plane angles
plane figure
X-Y plane
plot
plumb lines
polar
polygon
polyhedron
polynomial
position
positive
possible error
postulate
power
precise
prime factor
principal
principle
prism
probability
product set
profile
progression
projection
proof
property
proportion
proposition
protractor
puzzle
pyramid
Pythagorean
quadrant
quadratic
quadrilateral
quantity
quartile
quaternion
quinary point
quotient
radical segment
radian
radical
radicand
radii
radius
range
rate
ratio
rational number
ray
real number
reasoning
reciprocal
rectangular coordinate system reduction formula
reference
reflexive
region
regroup
regular
relation
relative
remote interior of a triangle
renaming repetition principal
replacement representative number
result
resultant reuleau triangles
reverse
rhomboid
rhombus Riemannian geometry right cylinder right member
root
rotate
row
rule Sacceri quadrilateral sample point sample space
sampling
scale
scalene
scatter
scientific notation
secant
section
sector
segment
semicircle
separation
sequence
series
set builder-notation
set of points
shortest path
sieve of Erathosthenes
sign of a number
radical sign
signed numbers
significant digit
similar
simple
simplex
simplify
Simson line
simultaneous equation
sine
sinusoidal waves
skew line
slant height
slide rule

Mathematics words, teach as needed

slope
smooth curve
solid
solution
space
span
sphere
square measure
square of a number
square root
standard
if-then statements
statistics
straight angle
straight edge
structure
subscript
subset
substitute
subtend of angle
subtrahend
sub unit vector sum
summation
supplementary
surd
surface
sweep
symmetry
synthetic coordinate system
tangent
computer tape
target set
tautology
technique
tendency
term of a polynomial
terminal side of angle
terminating decimal
ternary operations
tetrahedron
theorem
theory
topology
transcendental number
transform
transitive
translations
transposition
transversal
trapezoid
triangle of Pascal
trichotomy
trigonometry
trihedral
trinomial
triple
tripod
trisection
truth set
twin primes
two-point equation
two-point form
unary
undefined
undoing
unequal
union
unique
unit circle
unit fraction
unit of measurement
unit of time
unit vector
unit of weight
units of length
unknown
unlimited
valid
value of a function
value of a trigonometric ratio
variable
variance
variation
varies
vector
velocity
Venn diagram
verbal problems
vertex
vertical
vinculum
vinogradov
volume
wave
well-defined set
zeros of a function

VOCABULARY

By the end of level 9 students should be skilled in adding words to their vocabularies through:

1. Context clues
2. Understanding words through separation into root and affixes
3. Understanding word connotation and denotation
4. Incorporating precise and technical language into their total vocabulary
5. Understanding the use of synonyms and antonyms
6. Application of dictionary skills

STUDY GUIDE

Vocabulary Development

Some Suggestions for Reinforcing and Expanding Vocabulary

Three basic approaches are available for developing the meaning of words needing reinforcement and expansion.

The first approach is to provide the student with appropriate reinforcement exercise.

A second approach is to help students reinforce their own vocabulary by keeping either a vocabulary notebook or word cards. The latter method is handier. A new word is written on one side of a 3 x 5 card with a definition and illustrative sentences on the other. A small pack of cards can be reviewed frequently and discarded as words are mastered. Because the habit can be of life-long value, it is worth the effort to develop it in your students. Much, however, depends upon the motivation of the students.

A third approach to vocabulary development is to help students to expand their interests in words beyond the limits of the course textbook.

1. Collect anecdotes, jokes, and stories that depend upon their effect on a particular use of language (slang, multiple word meanings, dialect, etc.)
2. Trace the history of words
3. Check multiple meanings of words
4. Study the effect of a particular foreign language on our English vocabulary
5. Become interested in books about language
6. Collect words that add to your present interest
7. Get in the habit of learning and orally using a word a day
8. Study propaganda and advertising to note the connotative and descriptive uses of words
9. List as many words as you can that employ the same root or prefix or suffix
10. Analyze an author's word tone by noting the pattern of words and connotations throughout his work
11. Learn to enjoy doing crossword puzzles and other word games
12. Study the subtle differences in multiple "synonyms" of a word

FOR TEACHERS:

Keep a lively bulletin board where word study can be illustrated by word histories, worksheets, pictures, cartoons, headlines, clippings, jokes, and advertisements.

From Delva Daines

PRINCIPLES OF LEARNING WHICH UNDERGIRD EFFECTIVE VOCABULARY REINFORCEMENT AND EXTENSION

Vocabulary learning is MOST effective . . .	Vocabulary learning is LEAST effective . . .
. . . when it is planned and direct	. . . when it is accidental and incidental
. . . when it is varied and thought-stimulating	. . . when it is repetitive and thought-numbing
. . . when it focuses on a few essential words	. . . when it scatters attention over hundreds of words
. . . when presented in frequent, brief drills	. . . when presented in infrequent, lengthy drills
. . . when students are convinced of its value and desire to engage in the activity	. . . when students are unconvinced of its values and/or unmotivated to engage in the activity

Premises	Practices
Word-meaning skills seldom develop by chance . . .	Therefore, give the students planned, sequential instruction in the use of word-meaning skills.
Word-meaning skills are of value only when students use them independently . . .	Therefore, teach students the values of word-meaning skills as aids to learning the vocabulary of your subject and as aids to unlocking the meanings of unknown words encountered during independent reading.
A meaning of a word depends upon its context . . .	Therefore, the exploration of a meaning of a word should always begin by seeing the word in its context.
Context reveals only one specific meaning of a word . . .	Therefore, students should be taught to seek a meaning of a word, not the meaning of a word.
Ideas learned inductively are often more meaningful and memorable than ideas presented deductively . . .	Therefore, guide students--after the examination of several examples--to discover the uses of context clues and the meanings of word parts.

1. Use action-packed slide shown on screen, teachers working in small groups expressed as many descriptive words suggested by slide as possible in 10 minutes

2. Provide synonyms and short definition for words or phrases used

SELF-EVALUATION OF MASTERY OF VOCABULARY

The "Divided Page"

Key Term	Meaning

(Test your understanding by covering this side)

ASSIGNMENT

A word to the wise:

Haste seldom accomplishes as much as patience. You get the chicken out of the egg by waiting until it hatches, not by breaking it.

--Roger Carlson

1. Journal--all four parts

2. Continue with the previous assignment with Greek and Latin roots and affixes. Submit any additional vocabulary lessons you have developed.

Survey of words found in eighth grade math text of Latin or Greek parts (all have not been checked as to this fact) [300 words]

absolute
acquire
actual
acute
addition
additive
adjacent
alternate
altitude
approximate
approximately
angle
answer
area
around
associative
astronomical
average
axis

base
binary
bisect
broken
bureau

calories
capacity
celsius
centimeter
central
circle
circular
circumference
classification
code
collinear
common
commutative
compare
comparing
compass
complement
complementary
complete
composite
compound
compute
cone
congruent
consider
conspicious
construct
construction
contains
continue
conversion
convert
coordinate
copy
corresponding
cosine
cost
cubic
curriculum
cylinder

data
decameter
decimal
decimeter
decrease
deimos
denominator
density
description
diagonal
diagram
different
digit
dimension
discount
disjoint
disregard
distance
distributive
divide
dividing
divisible
division
divisor
domain

education
eight
element
empty
entries
equal
equation
equilateral
equivalent
error
euclidean
exactly
examine
exercise
expanded
expensive
exponent
exponential
expression
extreme

factor
factorization
fahrenheit
fibonacci
figure
finite
five
formula
fraction
fractional
function

geometric
geometry
glossary
gram
graph
graphing
greater

hectometer
hexagon
hundredth
hypotenuse

identity
illustration
immigration
increase
index
inequality

infinite
information
integar
interest
interior
intersect
intersection
intersecting
intervals
inverse
irrational
isosceles

kilogram
kilometer

lateral
least
length
level
line
liquid
liter

mars
mass
mean
measure
median
member
mercury
meter
metric
millimeter
mode
multiple
multiplication
multiply

negative
neither
noncollinear
nonzero
notation
numbers
numeral
numeration
numerator

observe
obtuse
operation
opposites
orbit

origin
owner

parallel
parallelogram
pentagon
percent
percentage
perimeter
perpendicular
phobos
pivot
plane
plot
point
polygon
population
position
positive
possible
precise
precision
president
prism
probability
problem
product
professor
property
proportion
protection
protractor
pyramid
pythagorean

quadrant
quadrilateral
questions
quotient

radius
range
ratio
rational
reading
reasoning
reciprocal
rectangle
rectangular
region
regular
related
relating
relation

relative
remotest
rename
repeating
replacement
represent
rewrite
Roman
rotation
roumding

scalene
scientific
segment
set
significant
similar
simplest
simply
sine
slide
solution
solving
standard
statistics
subscription
subset
subtract
subtraction
superior
supplementary
surface
symbol
symmetry
system

tangent
temperature
ten
tenth
terminating
theory
translation
transversal
trapezoid
triangle
triangular
trigonometric
twelve

underline
unfolded
union
unit

universal
universe

value
variable
vertex
vertical
visible
volume

weight
writing

zero

Name_____

DIRECTIONS: Find the 25 math words on the puzzle, write them below. Identify the prefix, root, and suffix, if there is one, and the meaning. Then check whether it is Latin or Greek. (Use a dictionary when necessary.)

	Word	Prefix	Root	Suffix	Meaning	Latin/Greek
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						
21.						
22.						
23.						
24.						
25.						

MATH WORD PUZZLE

A B S O L U T E V E R T E X

P A R A L L E L F A C T O R

O H O N R K W D E C I M A L

L I T D E M D I Q C Z U P C

Y N A F E R A S U W E M M I

G F P U F E C J I T R U D R

C I E R W A T O L B O L A C

N N M D L S W I A B P T E U

L I U E W R Q N T L I I R M

K T N S H M W T E O S P W F

K E P P E D W L R W B L V E

L U A D T J A W A I H E W R

O R I G I N R T L R G S V E

G A P R O P O R T I O N X N

N H F G I N T E G E R K D C

G C A U R L T N E N O P X E

G I T R A N S V E R S A L H

D J R T C H D L T C E S I B

Name_____ Period_____

Below are 15 word roots and prefixes (and their meanings) that are found in Chapter 45. Before you read the chapter, write a word in the first blank that uses that root or prefix as part of that word. (Example: un = not; unforgettable)

In the space at the right use at least three of these roots and prefixes to make up your own words and give the meaning of that new word. (Example: uncola, not a cola, or 7-Up; gradulator, a stairway or staircase).

1. un = not _____
2. port = carry _____
3. pre = before _____
4. trans = across _____
5. ir = not _____
6. grad = step _____
7. dict = to say _____
8. culture = cultivate _____
9. im = to go in _____
10. agri = field _____
11. topo = place _____
12. speci = particular _____
13. graphy = write, record _____
14. geo = earth _____
15. inter = between _____

Now read chapter 45 and list eight of the words from the chapter that use any of the above roots or prefixes and write the meaning of each word. (Example: immigrant = migrants to go in)

1.
2.
3.
4.
5.
6.
7.
8.

ASSIGNMENT--BIOLOGY

The following 40 words are found in your biology books. Notice that the words contain prefixes, suffixes, or root words that are underlined. Your assignment is to write the meaning of each word by using the list given you of prefixes, suffixes, and roots and their meanings. After you have written the meaning of the word, then find another word in your own vocabulary that also contains one of the prefixes, suffixes, or roots found in the word you are defining. Write your new word down in the space provided.

Word	Meaning of word	Your word
ornithology		
a bio genesis		
antibody		
antitoxin		
asymmetrical		
biochemical		
bio genesis		
bivolve		
cohesion		
deficiency		
endo derm		
exoskeleton		
epi dermis		
appendicitis		
expiration		
bio logy		
auto trophs		
beneficial		
micro scope		
a trophy		

Word	Meaning of word	Your word
anatomy		
re generation		
semicircular		
pressure		
posterior		
subsoil		
translocation		
pedipolps		
unicellular		
pseudo podium		
photo synthesis		
diffusion		
molecule		
carrier		
geo log ist		
ameboid		
trichinosis		
dermatitis		
en cephal itis		
icthyology		

PREFIXES

Word	Meaning
a	not, without
ab	away, from
ac, ad	to, toward
amphi	both, around
ante	before
anti	against
apo	from, away
arch, arche	first, chief
bi	two
cata, cath	down
circum	around
cis	on this side
co, com, con	with
contra, counter	against
de	down, away from
di	twice
dia	through, across
di, dis	apart, away
dys	bad
en	in, into
endo	within
ep, epi	upon, among
eu	good
ex, e	out of, from
extra	beyond
geo	earth
hyper	beyond, over
hypo	under, less
im, in	in
inter	among, between
intra	within
intro	inside
juxta	near
met, meta	change, among
non	no, not
ob	against
par, para	beside
per	throughout, thoroughly
peri	around
post	after
pre	before
preter	beyond
pro	forward
quasi	seemingly
re	again, back
retro	backward
se	apart, without
semi	half
sub	under
super, sur	above, over
sym, syn	together, with
trans	across, over
ultra	beyond

SUFFIXES

Word	Meaning
able, ible	that can be
acy	state of being
al	of, like, having the nature of
an	of, having to do with; a native or inhabitant of
ant	one who
ary, arium, orium	place for, belonging to
aster	inferior
ata	of, having to do with
cle, cule	small
ent	one who
er, or	a person or thing performing an act or having to do with
fy	make, cause to be
ic	having to do with
ier, yer	a person concerned with
ile	of, like, pertaining to
ine	like
ion	act or process of
ist	a person who
ite	a native of, a person associated with
itis	inflammation of
ive	of or having to do with
ize	cause to become or resemble
ment	act of or state of
oid	like
osis	disease of
ous	full of
sect	to cut
tion	act, process, or state of
tude	quality, state of
ure	act or process of

COMBINING FORMS

Word	Meaning
astro	star
auto	self
bene	well
biblio	book
bio	life
brevi	short, brief
cephal	head
chrono	time
cide,	causing death
cosmo	world, universe
dec, deca	ten
denti, dent	tooth
derm, dermat	skin
duo	two
ectomy	removal of
geo	earth
gen	origin, kind, race
gram	something written
graph	to write
hydro	water
hypno	sleep
icthy	fish
litho	stone
logy; log	study of
macro	large
mal	bad
mania	exaggerated or mad
meg, mega	one million, great
meter	a measure
micro	small; that magnifies small things
milli	one thousand; one-thousandth of
mono	one
multi	many
neo	new
oct, octa, octo	eight
omni	all
ornith	bird
pan	all
ped, pede, pedi, pod	foot
phil, philo	loving, fond of
phobia	fear
phon, phone	sound
photo	light
poly	many
proto	first
pseudo	false
quadra, quadri	four
scope	look
sol, soli	alone
syn, syl, sym, sy	together, with, very
tel, tele	far off
tomy	cut into
tri	three
troph	feed, nourish
uni	one

PREFIXES, ROOTS AND SUFFIXES

Prefixes and suffixes are parts of words (syllables) added to a root word to change its meaning. A prefix (pre, meaning in front of + fix meaning to put) is a part of a word put in front of a root. A suffix (suf or sub, meaning to put under or at end of + fix) is part of a word put at the end of a root. Sometimes the last letter of the prefix is changed to make it fit the root better. Sometimes the first letter of a suffix is changed for the same reason.

Listed below are some common prefixes, roots and suffixes. Read the list carefully.

PREFIXES

Prefix	Meaning	Prefix	Meaning
chloro	green	photo	light
di	two	trans	over, across
mono	one	re	back, again
bios	living things	pro	before, forward
per	through, throughout		

ROOTS

Root	Meaning	Root	Meaning
annual, ennial	year	botan	plant
plasm	formed, mold	cell	small room
phloem	bark of a tree	phyll	leaf
proto	first, basic	eco	house
tax	order, arrangement	cotyle	leaves
		stoma	mouth
syn	with, together	spira	breathe
cyto	hollow vessel, cell	trop	turning
		plast	particle, granule
duc	lead, bring	xylem	wood

SUFFIXES

Suffix	Meaning	Suffix	Meaning
ist	a person who	logy	reason, study of
tion	action of	onomy	law
thesis	arranging	don	modified
ism	act, process		

DIRECTIONS: Make words by combining the word parts on the preceding page

Example: botanist
plant person

1. _____
small room

2. _____
year

3. _____
green leaf

4. _____
green particle

5. _____
hollow vessel

6. _____
house reason

7. _____
two leaves modified

8. _____
one leaf modified

9. _____
through year

10. _____
bark of tree

11. _____
light together arranging

12. _____
first formed

13. _____
mouth

14. _____
over breathe action

15. _____
turning process

16. _____
wood

17. _____
arrangement law

18. _____
again forward bringing action of

ISA 4

CROSSWORD PUZZLE

DIRECTIONS: Listed below are the words that fit in the crossword puzzle blanks. To help you find where they go, use the information given below for down and across and from the first page on prefixes, suffixes and roots

monocotyledon	biologist	stoma
photosynthesis	dicotyledon	ecologist
chloroplast	ecology	reproduction
cytoplasm	botanist	cell
protoplasm	tropism	chlorophyll
perennial	annual	transpiration
phloem		

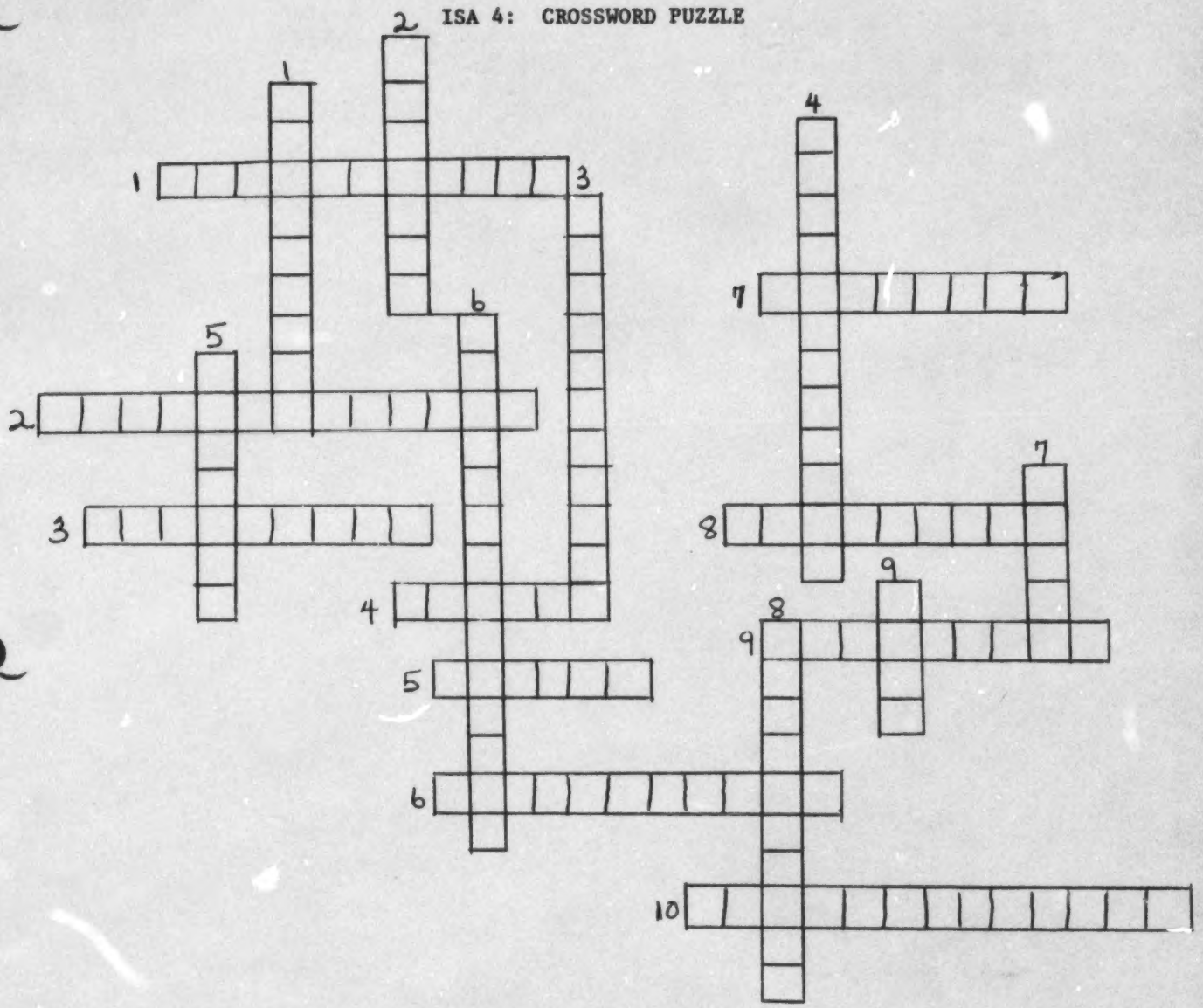
ACROSS (key words are underlined)

1. Green structures (particles) in a leaf
2. A plant with one modified leaf when it germinates
3. Material formed in cells
4. Plant that grows and reproduces and dies in only one year
5. The bark area of a tree
6. A plant with two modified leaves when it germinates
7. A person who studies plants
8. A person who studies where something lives (house)
9. Plants that grow and reproduce year after year (throughout years)
10. The act or process of a plant breathing through (across) its leaf

DOWN (key words are underlined)

1. A person who studies living things
2. The act of a plant growing (turning) towards something such as light, water or gravity
3. The green material in a plant leaf
4. The process of a plant or animal bringing forth new little ones again
5. The study of the home area of living things
6. The process by which a plant arranges materials together with light
7. The mouth or opening in plant leaves through which the plant breathes
8. The first living material formed
9. The structure in plants and animals that looks like small rooms

ISA 4: CROSSWORD PUZZLE



ISA 3: PREFIXES, ROOTS AND SUFFIXES

Vocabulary Words

DIRECTIONS: Complete the title of the assignment paper by adding to it the two words as shown above.

Read completely the first paragraph of the assignment paper.

Be prepared to answer a few questions orally about this paragraph.

Working by yourself (you may move if you need to), or with one other person, look at page 2 of the assignment and follow the directions.

Look at your notebook and find the ditto sheet for ISA 1, Plant Vocabulary Words assignment. On this sheet circle the words and their numbers which match the words you just made on page 2 of Prefix, Roots, Suffix paper.

Write on the ISA 1 ditto paper following the word, the page number as shown on the board.

Use the page number listed for each word on the ISA 1 ditto paper to find the word in the text: Life, Its Forms and Changes. Read the paragraph that tells about the word. From your reading and by thinking, write on a piece of notebook paper an excellent meaning for each of these words.

The following list contains words not understood in yesterday's exercise:

periodical literature	abridged
cumulative	abbreviation
corresponding	source

See if you can fill in the blanks of the following problems.

1. Some examples of periodical literature are CAR CRAFT, HOT ROD, U.S. NEWS AND WORLD REPORT, SEVENTEEN, SPORT'S ILLUSTRATED. Periodical literature is another term for what we usually call _____.

2. THE READER'S GUIDE TO PERIODICAL LITERATURE is the name of an index to articles and stories published or printed in magazines. The index is printed twice each month and every few months these indexes are combined or cumulated so you need only look in a few issues for the article you may wish to find. The word _____ means a combination or collection of indexes over a period of time. Cumulative means _____.

3. Our library takes a smaller or shorter index called THE ABRIDGED READER'S GUIDE. This index lists articles from about one-third of the magazines or periodicals listed in the READER'S GUIDE TO PERIODICAL LITERATURE. Another word for abridged is _____.

4. The titles of the magazines are abbreviated. Bet. Hom. & Gard. is an abbreviation for BETTER HOMES AND GARDENS. The abbreviations are listed at the beginning of each issue of the index. Can you guess what Pop. Sci. is the abbreviation for? _____

5. The source of a magazine article or story is the name of the magazine where you can find it. If you wished to find a story about Liza Minnelli appearing in the McCall's magazine, May 1975, the source of the story would be _____.

6. The word "corresponding" sometimes is used to mean "similar" or "going along with." In the READER'S GUIDE the articles or stories are listed in more than one place. They are listed under the author's name and by subject. Sometimes more than one subject entry is used because the story is about more than one subject. A corresponding entry to an author listing would be a _____ listing.

EXERCISE NO. 1

1. Find an issue of a magazine you regularly read.
2. Read at least three paragraphs of an article or story in the magazine.
3. Write down the following about the article or story:
   a. Source (name and date of the magazine)_____
   b. Title of the article or story_____
   c. Author of the article or story_____
   d. Subject of the article or story (what it was about)_____

      _____

      _____

EXERCISE NO. 2

1. Choose a subject to look up in the ABRIDGED READER'S GUIDE. It is

   _____.
2. Find two articles or stories on the subject you have chosen.
3. List the following for each article:
   a. Source_____
   b. Title of article_____
   c. Author_____
   d. Write down the numbers at the end of the listing_____

      _____ Which number tells you the page number?_____

U.S. History
Chapter 24: The Challenge of America

DIRECTIONS: Following is a list of words from this chapter that you should become familiar with and have an understanding of by the time the chapter is completed. Using the words in the first group, find the one that you think fits best and place it in the blank of the proper sentence below. You may use your textbook and try to find the word in the chapter. After you have used the word in the blank, write out your definition of the word (what you think it means) under the sentence.

Group I

undemocratic	legislator	constitutional
interracial	expedition	manufactured
independence	expansionist	technology
international		

1. The Alaskan _____ passes laws for the state of Alaska.
2. The Supreme Court's job is to determine if laws passed by Congress are _____.
3. If your freedom of religion, speech, assembly, and right to vote were taken away, you would consider this very _____.
4. Hawaii has a very successful _____ community.
5. The Boxer Rebellion was put down by an _____ army.
6. Matthew Perry led an _____ to open up trade with Japan.
7. Through modern _____ Japan has become an industrial nation almost overnight.
8. Japan sells cheap _____ goods to America.
9. July 4, 1946, the U.S. granted _____ to the Phillipine Islands.
10. People wanting the U.S. to grow in land size were called _____.

Group II

espionage	Pan American Union	Good Neighbor Policy
isthmus	customs house	dictatorship
communist	annexed	hydroelectric
capitalist		

11. Hawaii and Alaska were _____ in 1959.
12. The U.S. _____ was established between us and Latin America during the 1920's and 1930's to help promote friendly relations.
13. Cheap power can be produced with _____ dams.
14. A _____ government was established in Cuba when Fidel Castro took over in 1960.
15. Castro's one-man rule in Cuba can also be called a _____.
16. A _____ was established between the U.S. and Latin America to help provide them with economic aid.
17. Taxes on goods coming into a country are collected at a _____ _____.
18. Russia and other communist countries sometimes acuse the U.S. and other free western countries of being _____ because we allow free enterprise (business and manufacturing has very little government control).
19. A canal was dug across the _____ of Panama in Central America.
20. The U.S. Central Intelligence Agency carries out _____ activities against other foreign countries.

Write down all those words from the two lists above that are new to you, and you have never heard them used before or still do not know what they mean.

PLANT VOCABULARY WORD MEANING LIST

DIRECTIONS: Listed below are some of the meanings of the vocabulary words for our unit on plants. Read the meaning of the word then look at the words listed at the end of the meanings and choose the correct word for the meaning. Write this word down on your notebook paper.

1. Flowering plants that complete their life cycle, including the production of seeds, in one year.
2. The chlorophyll-containing structures of varying shapes in plants.
3. The study of the interdependence of organisms and their environment.
4. Flowering plants whose seeds have two cotyledons, or seed leaves.
5. The green substance in plants that is able to capture and transform light energy into the chemical energy that can be used by the living organisms.
6. The basic structural unit of living organisms, consisting basically of a nucleus, cytoplasm, and cell membrane.
7. All the living material of the cell.
8. Flowering plants that continue to produce flowers and seeds season after season.
9. Flowering plants whose seeds have only one cotyledon, or seed leaf.
10. The process by which plants with chlorophyll use light energy to manufacture carbohydrates.
11. The life process by which organisms reproduce themselves.
12. The food-conducting tissue in green plants.
13. The living matter making up the cells of living organisms.
14. The water-conducting tissue in green plants.
15. One of the microscopic openings formed and controlled by guard cells in the epidermis of a leaf or stem and through which carbon dioxide, water vapor, and oxygen enter the plant and leave it.
16. An automatic growth response of a plant to a stimulus.
17. The science of classifying, or grouping, organisms according to structural and other similarities.
18. The process by which green plants lose water by evaporation through their stomata.

19. A scientist who studies plants.

annuals
cell
chlorophyll
chloroplasts
botanist
cytoplasm
dicotyledons
ecology
monocotyledons
perennials
phloem tissue
photosynthesis
protoplasm
reproduction
stoma
taxonomy
transpiration
tropism
xylem tissue

Name_____

DIRECTIONS: Find a word in your book that has these word roots or additions in it. Write the word on the line provided. Also, write the page number where you found it. (2 points per word found)

Root/affix	Meaning	Your word	Page found on
anti	against	1._____	_____
auto	self	2._____	_____
aqua	water	3._____	_____
audio	hear	4._____	_____
circum	around	5._____	_____
via	through, across	6._____	_____
ex	out	7._____	_____
geo	earth	8._____	_____
graph	write, record	9._____	_____
in	not	10._____	_____
inter	between	11._____	_____
meter	measure	12._____	_____
phono	sound	13._____	_____
pro, pre	before	14._____	_____
scribe	write	15._____	_____
tele	far, distance	16._____	_____
trans	across	17._____	_____
video	to see	18._____	_____

AUTOMOBILE: When the first automobiles appeared on the streets, people were amazed. Why weren't horses needed to pull the contraption? How could it run by itself? The Greek root word autos means "self," and the word automatos means "self-moving" or "self-acting." In this age of marvelous machines, the self-moving automobile is no longer a curiosity; it is one of our most common daily sights.

Many other familiar words are formed with autos or automatos. Can you place the correct words in the blanks in the eight sentences below?

autobiography	autonomy
autocratic	automotive
automation	automat
autopsy	automaton

1. One of Miriam's favorite memories of her birthday trip to New York was of shopping in Macy's and then eating in an _____. (a restaurant in which patrons get food from small compartments with doors made to open by putting coins into slots)

2. Benjamin Franklin's _____ has fascinated many generations of readers. (the story of a person's life written by himself)

3. Exhausted, Jack packed his tools away slowly and unthinkingly, moving like an _____ (a person acting mechanically, especially one unintelligently following a routine).

4. The increase of _____ in factories has forced many workers to learn new trades or to find jobs in other fields. (in manufacturing, a system in which many or all the processes of production are performed by self-operating machinery, electronic devices, etc.)

5. A country with an _____ leader may lose its political stability if he dies or is deposed without a capable successor. (dictatorial, despotic; with unlimited power over others)

6. With the permission of relatives of the dead man, doctors performed an _____, in hopes of finding out more about the baffling disease that had killed him. (an examination and dissection of a dead body to discover the cause of death, damage done by disease, etc.)

7. The _____ class in the technical high school trains young men to be mechanics. (having to do with automobiles)

8. Some former colonial nations insisted on full _____ before they had enough trained governmental personnel to direct the country. (right of self-government)

WORKSHOP PRESENTATION OUTLINE

SESSION 9

Section a: Science and mathematics
Section b: Social studies

1. Show and tell
2. Follow-up for directions
3. Four types of vocabulary (oral presentation)
4. Skills compilation
5. Study habits checklist
6. Study guide
7. Assignment

READING STUDY SKILLS

Upon entering level 7 most pupils should have attained facility in the following reading study skills:

1. Differentiating reading purposes
2. Following written directions
3. Using the parts of a book
4. Skimming for information
5. Making a written summary
6. Taking notes
7. Organizing information from several different sources
8. Using outlining as a study technique
9. Reading graphic material
10. Using guide words in the dictionary

HOW TO FOLLOW DIRECTIONS

You can follow hard directions by using this outline:

1. Carefully read directions

2. Ask yourself questions like--
   What should I do?
   What should I use?
   How much should I use?
   How should I do it?

3. Go over each step in your mind

4. Do it

5. Check to see if you did everything right

CRITICAL AND INTERPRETIVE READING SKILLS

Grade 7

1. Differentiating fact from opinion
2. Judging reliability of an author's statement
3. Judging the relevancy and adequacy of context
4. Recognizing overstatements on unfounded claims
5. Drawing conclusions and inferences
6. Anticipating events
7. Relating what is read to past experiences and self

Grade 9

1. Evaluating content in terms of purpose
2. Recognizing the author's purpose
3. Evaluating the author's purpose
4. Judging reliability of information
5. Differentiating between fact and opinion
6. Detecting propaganda
7. Identifying unsupported generalizations and recognizing exaggerations
8. Anticipating forthcoming events
9. Reading conclusion and making inferences
10. Applying implications to real life

WORD IDENTIFICATION SKILLS

Grade 7

1. Using generalizations governing sounds in attacking new words
2. Attacking words with common variations in pronunciation
3. Identifying and using inflectional endings
4. Identifying and using derived forms of words
5. Identifying and using common prefixes and suffixes
6. Using syllabication and accent in identifying words
7. Identifying and using compound words

Grade 9

1. Using generalizations and common variations governing sounds in attacking new words
2. Recognizing familiar elements in derived forms
3. Using syllabication and accent in identifying new words
4. Identifying and comprehending compound words

VOCABULARY

Grade 7

1. Using picture and context clues to word meaning
2. Incorporating precise terms into their total vocabulary
3. Understanding word denotation and connotation
4. Using the dictionary for word meanings
5. Understanding new words through known parts

Grade 9

1. Context clues
2. Understanding words through separation into roots and affixes
3. Understanding word connotation and denotation
4. Incorporating precise and technical language into their total vocabulary
5. Understanding the use of synonyms and antonyms
6. Application of dictionary skills

COMPREHENSION SKILLS

Grade 7

1. Identifying the main idea
2. Reading for detail
3. Reading for sequential order
4. Reading for cause and effect relationship
5. Understanding the effect of punctuation on meaning

Grade 9

1. Unravelling complicated sentences
2. Locating topic sentences
3. Identifying inferred main ideas
4. Isolating details
5. Recognizing sequential order
6. Recognizing relationship between cause and effect
7. Using punctuation as an aid to comprehension

READING STUDY SKILLS

Grade 7

1. Differentiating reading purposes
2. Following written directions
3. Using parts of a book
4. Skimming for information
5. Making a written summary
6. Taking notes
7. Organizing information from several sources
8. Using outlining as a study technique
9. Reading graphic material
10. Using guide words in the dictionary

Grade 9

1. Establishing purposes for reading
2. Following written directions
3. Understanding and using organizational patterns
4. Skimming material for specific information and to answer questions
5. Summarizing ideas
6. Using note-taking techniques
7. Organizing material through outlining
8. Reading graphic material
9. Using the dictionary effectively

	Almost Always	More than Half of the Time	About Half of the Time	Less than Half of the Time	Almost Never
Previewing					
1. Do you read over the table of contents of a book before you begin studying the book?					
2. Before studying an assignment in detail, do you make use of any of the clues in the book such as headings, illustrations, and chapter summaries?					
Reading					
3. Do you try to get the meaning of important new words?					
4. As you read an assignment, do you have in mind questions that you are actually trying to answer?					
*5. Do you look for the main ideas in what you read?					
6. Are you able to read without saying each word to yourself?					
7. In addition to reading the required textbooks, do you read other materials for your courses?					
Notetaking While Reading					
8. As you read your assignments, do you take notes?					
9. Do you review your notes soon after taking them?					
Remembering					
10. Do you try to find a genuine interest in the subjects you study?					
*11. Do you try to understand thoroughly all material that you should remember?					

	Almost Always	More than Half of the Time	About Half of the Time	Less than Half of the Time	Almost Never
12. When studying material to be remembered, do you try to summarize it to yourself?					
13. Do you distribute the study of a lengthy assignment over several study sessions?					
14. Do you try to relate what you are learning in one subject to what you learn in others?					
Report Writing					
15. Before writing a report, do you collect information by doing research in the library?					
16. Before writing a report, do you make an outline?					
17. In writing a report, do you clearly indicate the main idea of each paragraph?					
18. In writing a report, do you rewrite your first drafts?					
Listening and Taking Class Notes					
19. During class, do you search for main ideas?					
*20. In class, do you take notes?					
21. Do you revise class notes soon after class?					
Preparing for Examinations					
*22. Before an examination, do you review the important facts and principles?					
23. Do you combine important notes on your textbook and from class into a master outline in studying for a major examination?					
24. Do you make up examination questions that you think will be asked, and answer them?					
25. In studying for an examination, do you distribute your time over at least two sessions?					

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ASSIGNMENT

Administer Study Skills Checklist to classes:

7th--Math
8th--Science
9th--Social studies

WORKSHOP PRESENTATION OUTLINE

SESSION 10

Section a: Science and mathematics
Section b: Social studies

1. Sharing

2. Precis writing: oral presentation

3. Post-test (same as pre-test)

WRITING SUMMARIES FOR NOTE CARDS

A summary is a brief statement of the main ideas of a selection written in your own words. After you have read a passage carefully, select the important points and write them out briefly but clearly in your own words. A summary is often called a "precis" (pray-see).

Studying a Summary

The pressurized can, in which many products--from whipped cream to hair spray--are being packaged, may be dangerous. On the label appears a warning against placing the can near a flame or heat. Whether the can is empty or full, heat expands the gas in the can, and an explosion may result, causing property damage, physical injury, or even death. The user is also warned not to puncture an empty can, for any contents remaining in it may spurt out and damage clothing or hurt the skin or eyes.

According to safety experts, one way to make a full or nearly empty aerosol can harmless is to wrap it in a cloth or newspaper and freeze it overnight to lower the pressure. In the morning the frozen can--still wrapped--should be taken outdoors. After making a small hole in the covering to expose the bottom, turn the bottom away from you. Then puncture it with a can opener. Once the pressurized gas is released, the danger is removed.

--Original (170 words)

Your final summary will add a few connection words. The connecting words are to be underlined. Write a summary.

Hints for Summaries

1. Read the selection carefully--two or three times if you need. What does the author mean?
2. Select the main points.
3. Write the main points in your own words.
4. Do not include your opinion.
5. Use about one-third or one-fourth as many words as the original.
6. Re-read the selection to see whether your summary is accurate.
7. Re-read your summary to see whether it is clear.

ASSIGNMENT

1. Journal evaluation and completed journal due next week.

2. Final longitudinal evaluation due with journal.

This assignment incorporated all the reading skills studied the term.

STUDENT INSTRUCTIONAL UNIT

Subject of unit

1. To measure students' ability to work alone on individual unit (one-fourth of grade)
2. To measure creativity of student (three-fourths of grade)
3. To provide wide range of topic selection to meet individual student interest
4. To provide a learning experience for student

Organization of material

1. Materials must be organized neatly in a paperback looseleaf like you keep your notes in
2. They must be organized by chapters
3. Each chapter must be introduced with a title sheet that includes a list of the materials you have prepared for that chapter
4. All paper and supplies will be provided for you, except for the looseleaf

Directions

1. Proceed as if you were preparing materials for others to use in a school situation. Start with Chapter 28 on page 571 in your textbook, or any chapter that comes after 28. Chapter topics are as follows:

Chapter 29	World War I
Chapter 28	Spanish-American War
Chapter 30	World War II
Chapter 31	America's relationship to her neighbors
Chapter 32	Depression, Truman, Kennedy, Johnson, Nixon

2. For each chapter that you do you must prepare the following:
   a. Worksheet: This can be any type of question sheet. Try to make them fun and interesting.
   b. A map assignment: This must be completed as you would expect those you give it to to do.
   c. Some type of puzzle. This can be crossword, hidden word, etc. Again, an answer sheet must be provided.
   d. Instructions for some type of chapter review game. Be creative and willing to try new ideas, even if they seem a bit crazy.
   e. A chapter vocabulary list. Fifteen words per chapter with definitions
   f. A chapter test. This should include multiple-choice, fill-in-blank, true-false, and matching. List the number of

points each question is worth and the total possible for the entire test. An answer key must be provided with the test.

Grading

Providing that each chapter is complete, neat, and done properly, you will be graded on the following basis:

One complete chapter = C
Two complete chapters = B
Three complete chapters = A

Helpful hint

It will be impossible to do this assignment without first UNDERSTANDING each chapter yourself. So, before starting, READ the chapter paying close attention to title headings and subheadings.

GOOD LUCK, AND HAVE FUN PLAYING TEACHER